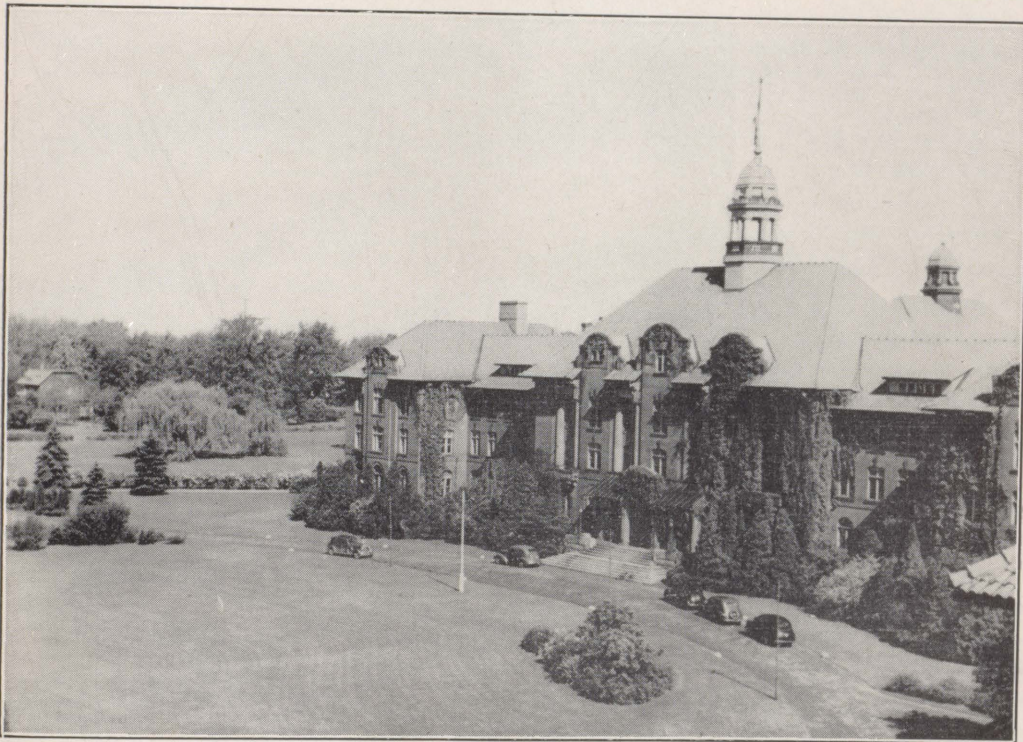


MACDONALD COLLEGE JOURNAL



VOLUME 6
No. 9



MAY
1946

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Everywhere!



SINCE
1858

MACDONALD'S *Quality Tobacco Products*



"The Government of Canada intends to encourage production of food on the most scientific basis possible, in order to provide the maximum yield of foodstuffs over the next few years."

(W. L. Mackenzie King,
March 17th, 1946)

It would be impossible to express an ideal farm policy in more cogent terms than the quotation we have given. In addition to the emergency program briefly discussed in our last issue, we are also faced with the necessity of planning our long-term program. While, therefore, we must strain every effort to meet the current emergency, we should take advantage of the situation to lay, broad and deep, the foundation of a permanent agriculture in Canada.

The fulfillment of the aim of the F.A.O. to feed all the people will require increased production everywhere. As the Prime Minister has inferred, such a program can best be achieved by making the maximum use of science at every point in our production program. Unless we mean business in this matter, such utterances as we have quoted express merely a pious hope.

One of the first things that we must do is increase yields per acre, per cow and per man. We can increase yield per acre in many ways. One such way is by speeding up our methods in securing the use of our best varieties, the adoption of which by our farmers is painfully slow. We can increase our production per cow by keeping better cows through better feeding and breeding methods and through the elimination of culls. We can increase the production per man by better organization, planning and management, and above all by the superior training of our farm workers.

The next thing that we must do is to treat with respect our greatest natural asset, which is the top few inches of our soil. There are two aspects of this question: (1) the maintenance of our soil fertility by adequate replacement of plant nutrients, and (2) the prevention of wind and water erosion which annually deposits in our streams vast amounts of this precious asset.

We have heard less in recent months of the extension to eastern Canada of the Prairie Farm Rehabilita-

tion program. The splendid success of this effort, the spectacular results of the Tennessee Valley Authority Project, and the scarcely less spectacular results of the United States conservation program, indicate that this should be a major component of any new planning.

Any intelligent program would involve close attention to better land utilization, for example, through the adoption of modern forestry practices and woodlot management.

In closing, we cannot do better than to quote a paragraph from an article appearing some years ago in the Journal "NATURE":

"The leakages, waste and losses arising from faulty organization, uneconomic utilization of labour and machinery, the ravages of animal and plant diseases, the uninstructed use of fertilizers and feeding stuffs call for continuous investigation and correction, while an immense amount of new work is still awaiting organization and endowment in order to raise the quality of the food products presented to the public, and to devise better and cheaper methods of transport, processing, storage, and distribution."

Our Cover Picture

For the picture on the cover of this special issue of the *Journal* we have chosen one of the Main Building, which is the centre around which all the other buildings on the campus are placed.

The photo was taken last summer by W. E. Whitehead, from an angle which brings out strikingly the beauty of the building and its surroundings.

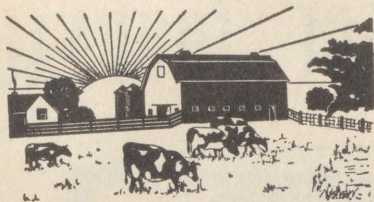
To thousands of graduates, students and visitors, this scene typifies Macdonald College.

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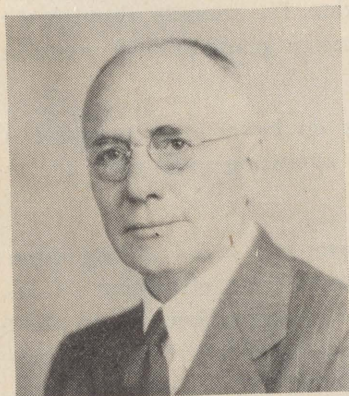
AGRICULTURE

Articles on problems of the farm

Taking the Barbs From the Barley

by H. E. Reilley

A porcupine with barbless spines would be a curiosity. Barley with smooth awns is a blessing to the farmer who must handle it. How this highly desirable feature was combined in a new variety with high malting quality is described.



Towards the end of February 1946, there appeared in a Montreal newspaper a short paragraph which said in part, "In recognition of his outstanding achievement in developing the Montcalm variety of barley, Professor E. A. Lods, Assistant Professor of Agronomy at Macdonald College, Quebec, was presented with a

gold watch at a dinner during the annual meeting of the National Barley and Linseed Flax Committee. The variety, produced after twenty-four years of patient labour by the Macdonald College professor is said to be superior to other strains in malting qualities and yield. The presentation was made on behalf of the entire barley industry."

Thus was recorded, on one of the back pages of a newspaper, the results of one man's work in one direction since just after World War I. In 1922, a young professor started the work that has borne fruit just this year. During those years he has aged but has kept his enthusiasm ever young, with the result that he has made an important contribution to the wealth of Canada.

A technical description would say that Montcalm barley, a cross between M.C.4917 and Mandscheuri 1807, is a six-row, almost smooth-awn barley bearing a grain having a white hull, blue aleurone, and a straight hair rachilla. In comparison with the standard barley, O.A.C.21, the straw is about the same length and strength, and generally, the yield is better. It is the first smooth-awn variety to be accepted in North America as equal to the recognized malting barley standards.

Its creator, Prof. Lods, has developed several other new types of oats and barley, but his outstanding success has been Montcalm. He is no novice at the plant breeding

business and knows, like all scientists, that such success is the result of many years of painstaking work. He is a graduate of Macdonald College and Cornell University, and is very well known in cereal breeding circles throughout Canada. He is in charge of the Provincial Seed Farm, which is operated by the College on behalf of the Quebec Department of Agriculture for the growing of pure seed stocks for the seed centres of Quebec province. He is a charter member of the Agricultural Institute of Canada (formerly Canadian Society of Technical Agriculturists) and Chairman of the Cereal Committee of the Quebec Seed Board. At present he is President of the Quebec Corporation of Professional Agriculturists as well as being on the Executive Committee of the Canadian Seed Growers Association. By these and other positions which he holds, it is evident that Prof. Lods is an authority in his own field.

A Long Job

In 1920 the wheat breeding program of the College was discontinued, and the emphasis was placed on oats and barley, two grains grown more in the Province of Quebec. The barley breeding program had started in 1907, but purely selection methods were employed. Later, in 1911, work was started in crossing the different strains or types. Since Prof. Lods took over the project in 1920, new crosses have been made each year. He started the work that eventually was to lead to the development of Montcalm barley in 1922. The original idea was to obtain a better barley with good characteristics and good yielding ability.

To bring a new type of grain such as Montcalm to a state of perfection is a long, laborious process. Prof. Lods' idea was to take the superior smooth-awned selections and cross them with superior lines of common types of barley. This system is a modified system of "back crossing" and the Montcalm was obtained from the first back cross, or the second stage of the program of back crossing. In the case of Montcalm, the cross was made in the greenhouses in 1922, and 23 seeds were obtained from 122 hand pollinations. These 23 seeds were planted and for five generations the progeny were grown in the field without any selection, until the breaking up had all but ceased and a large proportion of the plants bred true. In the sixth year, individual plants were selected. The progeny of these plants were used as individual varieties. At the end of the

(Continued on page 5)

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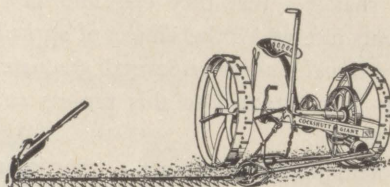
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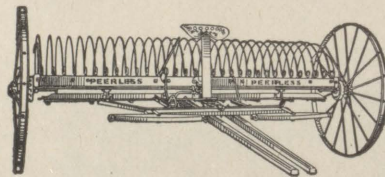
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Pastures

A FERTILE FIELD FOR INVESTIGATION

by L. C. Raymond

From four to five months each year our livestock depend wholly or in part on pasture for their maintenance, growth and production. For the past five years Quebec shows an average grazing stock population of 1,062,980 dairy cattle, 661,820 cattle other than milch and 544,628 sheep. Improvement of pasture output and quality, therefore, is a matter of the greatest importance in the farm economy.

The prominent place that pastures occupy was recognized in 1931 with the establishment of the Macdonald College Pasture Project — a cooperative undertaking between the departments of animal nutrition, botany, chemistry and agronomy. Pasture investigations are of such a complex character that they call into play many of the departments into which the subject of agriculture is divided for instructional purposes. Several graduate students have each year been attached to this project and assist in the work underway.

The field work carried out — particularly during the earlier years — was confined largely to natural pastures and mainly in the Eastern Townships regions. Extensive surveys were made to determine both the nature and extent of pasture areas, their history and treatment. Fairly extensive experiments were laid out involving mainly treatments with nitrogen, phosphorus, potash and lime in all combinations. The natural moisture characteristic of a field had a very definite influence on the efficiency of surface fertilizer applications. Results were also determined in part by the presence or absence of wild white clover and various other factors. In general it was shown that where moisture was in fair supply an application of minerals (phosphorus and potash) at a rate of 500 lbs. per acre (e.g. an 0-14-7 mix-

ture) would in most cases give an increase of at least fifty percent and in many one hundred percent in the herbage output, to say nothing of grazing of a very much higher quality. The results of these investigations are all incorporated in the recommendations of the provincial pasture committee.

With the organization of the group of provincial pasture workers under direction from Macdonald College, direct work on the farms by members of the older project has been largely discontinued. Attention by the latter organization has been focused on some detailed problems which are capable of study under laboratory conditions.

Ever since the beginning, one of the things that has been uppermost among the problems of the M.C. pasture project has been that of quality in forage. Chemical analyses of herbage from a wide variety of pastures was one of the first steps taken. Almost at the same time feeding trials were undertaken, under controlled conditions, to check the nutrient worth shown by the analysis figures. Difficulties at once appeared, since the analysis did not seem to reflect in any way exactly the nutrient worth of the material to the animal. This has led through a long series of trials in the nutrition aspects, which are still in progress.

In a practical way it has been known for a long time that animals thrive and produce much better on herbage which is young and tender. Hence the falling off in milk yields when the herbage approaches maturity, hence the recommendation to cut hay crops early, hence the well recognized pasture management methods which by clipping and rotational grazing aim to keep the various forage species in as actively a growing vegetative stage as possible.

Just what changes forage undergoes as it approaches maturity and how these changes affect its worth is the problem this project seeks to solve. It is being approached, as is necessary, from several different angles. The botanist tells us that plant stems as they mature harden or lignify — to use his term. A study is being made of this so far with red clover only. Similar samples at various stages of maturity are being fed to sheep, where, for the present, growth and production factors are set aside and attention focused on what happens in digestion. By a special technique samples can be drawn part way through the digestion process, while the nature of the plant material excreted as faeces can of course be examined. The chemist analyzes all of these fodder samples and is attempting to get a method that will reveal the amount of this so-called lignification that has taken place. From these different points of attack it is hoped to throw some light on this problem of quality. There seems every indication to date



A fertilized pasture on the farm of A. W. Rowe at Ascot Corner. This field carried somewhat over a steer per acre over a five year period. Presently it needs a clipping to remove the tall grass.

that this lignifying process does prevent anything like complete utilization of the actual nutritional constituents that the plant possesses.

Studies are also in progress on the effect of fertilizer applications to herbage. So far only phosphorus is being examined. These have shown some rather surprising results even in these early stages.

This project has been productive in publications. Apart from popular press articles there have been twenty-six other submissions, either in the form of bulletins or articles to scientific journals. One bulletin dealing with the identification of grass species has gone into its fourth printing, and has received and is receiving world wide distribution.

BARLEY . . . (Continued from page 2)

eight year, in 1929, all but one of these varieties were discarded. The remaining line subsequently was named Montcalm.

The following five years were taken up with local tests of various kinds. A further five years were occupied in tests by other agricultural stations in Quebec and other provinces. It was in 1938 that the results of the Malting Laboratory tests showed that malting qualities were an important factor in the use of this barley. More years were spent in testing, both agronomic and chemical, and at last, in 1945, after almost a quarter of a century, Montcalm barley was presented to the agricultural world as a proven variety.

The main advantages of Montcalm over other types of barley are its greater yield and better malting qualities. Actually, Montcalm is superior to the standard O.A.C. 21, in yield of heavy grade barley, slightly higher in kernel weight, and definitely lower in nitrogen content, which is a desirable feature. Its behaviour in malting is very similar to O.A.C. 21, so mixtures of the two varieties, such as might occur in commercial shipments, would create no difficulties in malting. Montcalm is superior in quantity and quality of malt extract. All these points indicate that, in Montcalm, Prof. Lods has made a worthwhile contribution to the malting industry.

Montcalm is the first barley which combines smooth-awn with superior malting quality, and was produced in spite of claims by many that such a combination was impossible. In plant breeding, as in all research, the greatest impetus to accomplishment is given by those who say: "It can't be done". Prof. Lods has certainly proved that it can be done, but he himself says, "Montcalm is not the final objective in barley improvement; it is another step forward."



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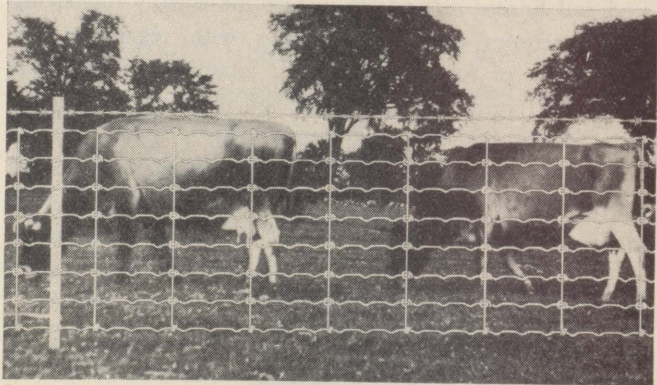
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Does Research in Animal Nutrition Pay?

by E. W. Crampton

If Canadian hog producers had had to depend on milk during the war years, our record bacon production could never have been achieved.

The watchmaker in much of his work is intently concerned with such a small part of the timepiece in hand that he must use a powerful magnifier to guide his efforts. One of the penalties he pays for thus magnifying his immediate field of work is that he cannot at the same time see the watch as a whole. And so in a sense, it is with the research worker in agriculture. The nature of his job is usually such that he must concentrate on a very small piece of the whole problem, and in so doing he can easily lose sight of the completed puzzle into which his bit fits.

It is well, therefore, occasionally to step back from the grind of the wheel to take stock of progress in terms of the practical result sought. Research in animal nutrition is no exception to the rule of all research — that the major problems to which answers are being sought are attacked in small studies, which, taken by themselves, may seem to make little if any sense. It is the purpose of this article to assemble some of the bits of our own researches, in order to see a little more clearly what progress we have been making in the problem of animal feeding.

Space does not permit consideration of the interesting work now going on in connection with the testing of some of the newer shortenings such as are being made from rape seed and linseed oil; nor to picture the equally interesting and sometimes surprising findings with regard to the peculiarities of foods as sources of vitamin C. Rather this article will bring together some of the findings in one series of our studies in swine nutrition.

These have grown out of two situations, neither of which were of our making. First was the necessity of finding a substitute for dairy by-products in the swine ration,

and second was the change in the objective in hog raising from the production of a live market hog of 200 pounds to the production of a carcass of 150 pounds of rigid specification.

Originally there were those who rather questioned the value of our efforts to find a substitute for skim milk for pigs. They were of

the opinion that the pig industry was inevitably tied to the dairy industry as it was by Government decree in Denmark. Indeed the success of bacon hog raising was believed dependent on milk. Some ten years of experimental feeding went into the development of our first successful mixed protein-mineral-vitamin supplement. Among the trials which were involved were many whose titles gave no hint that the findings would ultimately be a part of what now in Canada is the basis of most of the hog feeding — the so-called Hog Concentrate. For example, the whole system of individual feeding of pigs which required several years to perfect and to prove that it did not of itself give results different from those to be expected under farm conditions, was a necessary part of our research for a milk substitute.

Experiments in which such foods as yeast, wheat germ, corn germ, whey, alfalfa, tankage, fish meal, pure vitamin B₁, riboflavin, nicotinic acid, or degermed cereals were studied; rat experiments to confirm pig studies; digestibility studies; to say nothing of trials in which methods of ration preparation and of feeding practice were observed, all were parts of the major project.

As to whether or not the project has been worthwhile to date (for it is still in progress) is indicated in part by the results obtained at the Official Pig Testing Stations across Canada where identical rations are fed, and where the progress of the pigs and the excellence of their carcasses are accurately recorded. The rations used contain no milk, but employ a mixed protein-mineral-vitamin supplement which was a direct outgrowth of our research for a milk substitute at Macdonald College.

The records of these feeding Stations show that better than 75% of all pigs fed at these Stations yield A-grade carcasses. As compared to this, we find among pigs fed under the owners' direction, the majority of which in many districts use milk, the following record of A-grade carcass in the total slaughter for the months of October and November for the years 1940 and 1945:—

Province	1940	1945
Alberta	27%	25%
Saskatchewan	29	25
Manitoba	25	29
Ontario	29	41
Quebec	26	38

These figures do not tell the whole story, but in connection with the results at the Pig Testing Stations, they nevertheless make it amply clear that milk is by no means an essential in the pig ration.



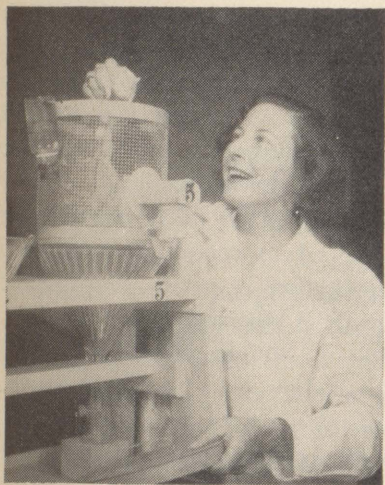
Sow's milk is richer than cow's milk.

It may be noted in this connection that following the adoption of the milk-free protein-mineral supplement by the Quebec Provincial Feed Board, registration for such "Concentrates" under the Feedingstuffs Act assumed major proportions and today practically every commercially prepared hog feed mixture is fundamentally a combination of grains and a milk-free protein-mineral supplement.

During the war years, shortage of ingredients for such "Concentrates" was so severe that they were distributed almost exclusively through feed manufacturers. The demand for whole milk was also so great that relatively little skim milk was available for pigs. The end result was that ever increasing numbers of pigs were raised on milk-free rations. In spite of this the quality of the hogs marketed

in the "dairy" provinces of Ontario and Quebec has shown a steady increase in the percentages in the top A-grade.

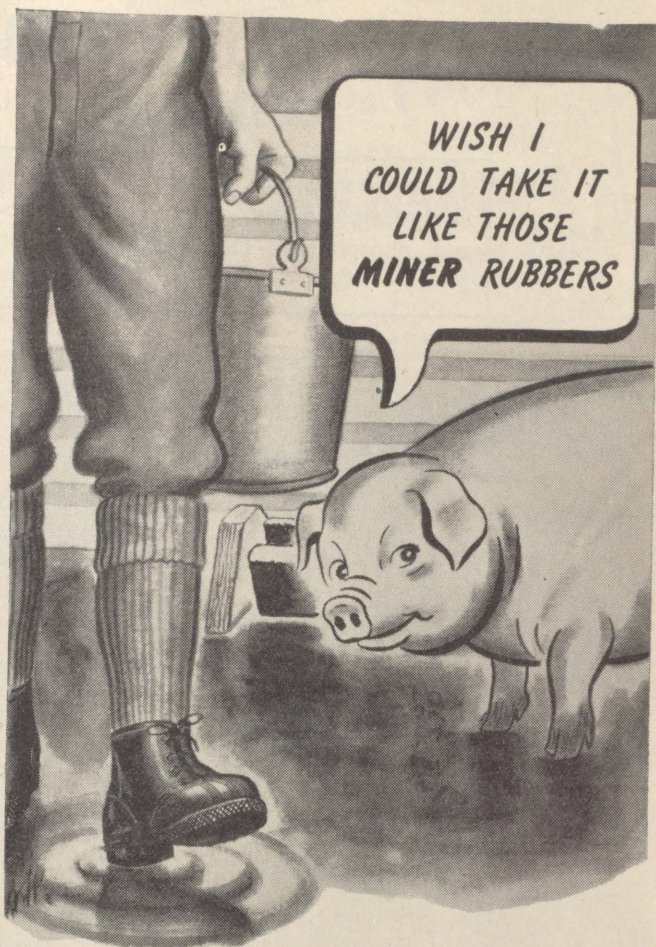
Admittedly many others have contributed to this development, but it is a matter of some satisfaction to see the picture at present and to realize that we have had a part in its development.



Rats are useful in testing pig rations.

Protest Farm Machinery Price Rise

Farmers and farm organizations through Canada, speaking through the Canadian Federation of Agriculture have registered a strong protest against the recent increase of 12½%, in the ceiling price for farm machinery, announced by the Wartime Prices and Trade Board. Following the receipt of telegraphed protests from farm organizations and member bodies from coast to coast, the Canadian Federation issued a statement to the press through its president, H. H. Hannam, which declared that the action of the prices board had more seriously disturbed Canadian agriculture than any similar action in recent years. It further declared that coming at a time when farmers generally were strongly sensitive of their responsibility to produce to the utmost in the face of the world food crisis, and without any promise of a general increase in prices of farm products, the action was discouraging and disheartening. In all justice, the statement said, the government should either reconsider its decision or take steps to adjust the situation immediately, lest the 1946 production program suffer.



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How Our Muck Soils Can Be Developed

by H. R. Murray

All muck soils lack potash, and crops growing on these soils must be given relatively large amounts of potash fertilizers, along with varying amounts of nitrogen and phosphorus. The special requirements of several crops have now been worked out.

high priced horticultural crops, for which it is ideally adapted.

Celery is one of the oldest as well as one of the most important muck soil crops, because the ideal conditions supplied by this soil give rise to that vigorous, succulent growth which is necessary to produce a high quality product both for immediate sale and for cold storage. In cultural experiments with celery it was found that high levels of nitrogen improved the table quality and did not shorten the length of storage; also that medium to heavy quantities of phosphorus helped to control pithiness, and that heavy applications of potash were essential for good growth. A recommendation for application of 1500 to 2,000 pounds of a mixed fertilizer of the analysis 3-8-15 is made for the production of celery on this type of muck soil.

Muck soils are quite often spoken of as "frosty soils", because killing frost of considerable severity will take place on mucks when adjoining mineral soils of the same elevation will experience only light frost, or no frost at all. This frostiness has quite often caused very serious damage to celery, especially if it is being grown for storage. Growers do not know how much freezing their celery can stand and yet be safe for storage. Following elaborate freezing studies and recovery tests it is now recommended that celery which has been subjected to freezing temperatures of 28.5°F. or lower, should not be put into storage.

Lettuce is by far the most important salad crop grown. It is, like celery, a crop which responds to the ideal conditions supplied by

muck. In experiments under controlled conditions, phosphorus was found to be the most important element in increasing the yield of No. 1 heads of lettuce. A generally high fertility level encouraged the development of tipburn, with nitrogen the most important single element in causing the disease. Fifteen hundred to two thousand pounds of a 2-12-6 fertilizer supplemented with four hundred pounds of muriate of potash should give the best results.



1. Horticulture Department staff: A. N. Nussey, H. R. Murray, A. H. Walker. 3. Cauliflower seed production. 4. Onion planting. 5. Onion seed production. 6. The famous Macdonald rhubarb.

There are, in Southwestern Quebec, over 50,000 acres of muck soil of which 40,000 acres are all within 45 miles of Montreal, Canada's greatest city and best market.

The experience of other areas indicates that we have here a priceless asset, if we can solve the problems involved in handling this soil for the production of the

Potatoes are both a field and a vegetable crop and although they are grown quite extensively on muck soils many consumers think that muck soil potatoes are of inferior quality and that they will "cook black". Extensive experiments were outlined to throw more light on this problem. It was found that a high level of nitrogen stimulated luxuriant vegetative growth, but that a high level of potash had a very marked influence on tuber formation. Furthermore, it was found that a high level of nitrogen without sufficient phosphorus and potash resulted in the darkening of tubers during cooking. Fifteen hundred to two thousand pounds of 3-8-15 plus three hundred pounds of muriate of potash, are applied broadcast, or 800 to 900 lbs. 3-8-15 plus 150 lbs. muriate of potash applied through the planter.

Carrots grown for dehydration responded favourably to the treatment recommended for lettuce.

This work is being continued with carrots, onions, spinach and lettuce and as the horticultural cold storage at Macdonald College will be completed this spring the cold storage studies will be more thorough and comprehensive.

On Demand

Every farmer knows that to meet seasonal demands for fertilizer, seed or supplies, there are certain periods when he must have large sums in ready cash on hand. The same is true of plant nutrients in the soil. Just as the bank releases money on presentation of a cheque, so does the soil release plant food at the demand of a crop. In both instances, unfortunately, the reply sometimes may be "not sufficient funds" and this reply may be given at very embarrassing times both by the bank and by the soil.

It is, of course, readily recognized that the demand made upon the soil by crops varies throughout the growing season, with the rate of growth and with seed production. The very great differences in demand with stage of growth were, however, brought most forcibly to the attention of the writer in a recent conversation with Dr. C. B. Sayre of the Agricultural Experimental Station at Wooster, Ohio. Dr. Sayre has measured the uptake of plant food by the corn crop at intervals of two to three weeks throughout the growing season. In this study he found, among other things, that more than half of all the nitrogen taken up by this crop in the whole season was drawn from the soil in the twenty-day period beginning just before the tasselling of the corn. Similar results for the uptake of plant food by potatoes have recently been obtained in Maine.

Such results as those obtained for corn in Ohio and for potatoes in Maine emphasize the great importance of having sufficient supplies of plant food available at the critical periods in crop growth. These findings are of particular importance at this time when high-yielding hybrid varieties are being introduced. These, because of their higher yields, still further increase the demand made upon the soil at critical periods. If the expected results are to be obtained with such varieties, we must be sure that the soil does not reply "not sufficient funds." —W. DeLong.

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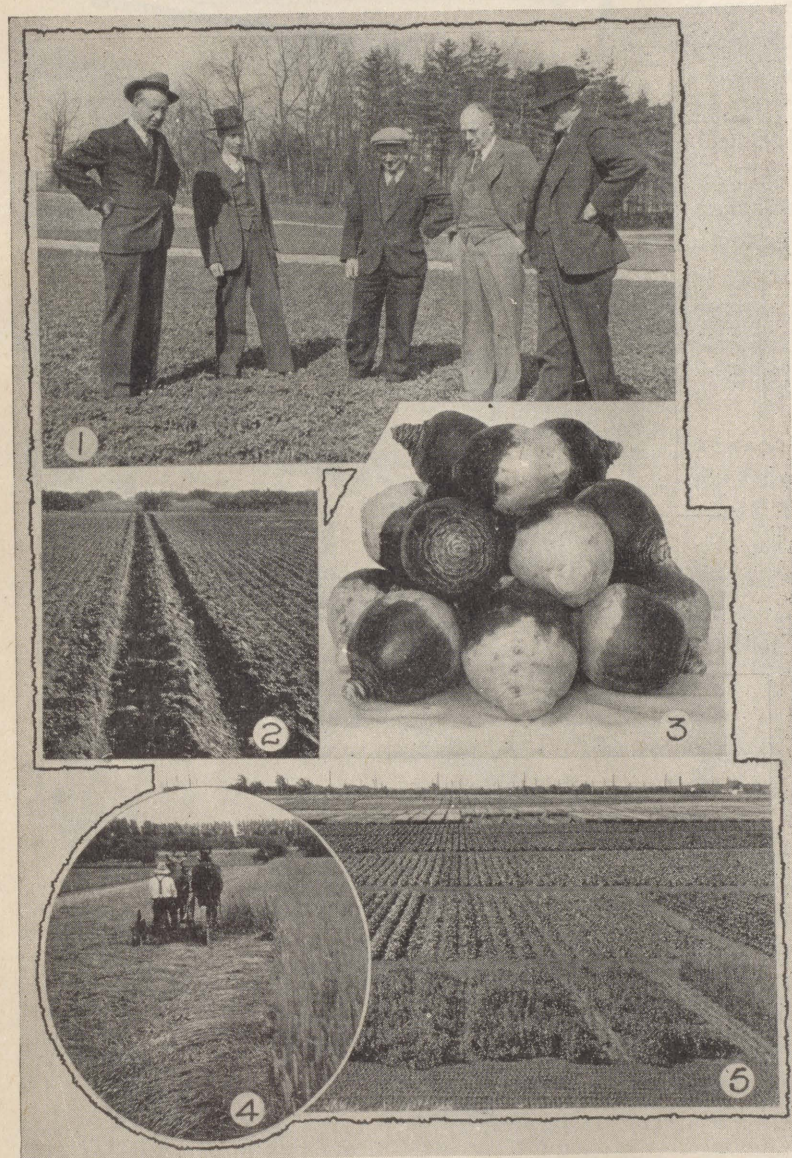
PAINTS - VARNISHES - ENAMELS

"GREEN CROSS" INSECTICIDES

Better Crops for Quebec

by R. Summerby

The aim of the plant breeder is to produce varieties of farm crops that can stand the climate, come to maturity and produce crops of superior quality, yield, and resistance to disease. Described herein are some of the fruits of Macdonald's almost forty years of work in this field.



1. The staff of the Agronomy Department: R. Summerby, J. N. Bird, J. Coull, E. A. Lods, L. C. Raymond. 3. Laurentian swedes. 4. Cutting Milton timothy. 5. Some of the experimental plots.

For nearly forty years, the Agronomy Department at Macdonald College has followed a consistent policy of crop improvement through breeding. Its aim has been to secure varieties of grains, grasses and forage crops suited to the widely varying conditions of soil and climate throughout a very large province — varieties that can with-

stand the severities of the climate, come to maturity in the available season, are of superior quality and yield, and resistant to the prevailing diseases to which these crops are subject.

Oats

The oat crop is particularly important, since it occupies three-quarters of a million acres and, considering the variations of climate within the Province, no one variety will do best. Many districts require an early oat, while, for all districts, superior yield, strength of straw, feeding value, and resistance to disease are equally important.

Two outstanding early varieties — CARTIER and MABEL, both of superior quality — are now available. CARTIER on the average yields five to ten percent more than ALASKA, while MABEL yields five to ten percent more than CARTIER, MABEL also shows resistance to the more important leaf rusts. ROXTON is another superior oat, medium-maturing, about ten percent higher than BANNER in yield, has excellent quality of grain, is leaf-rust resistant and is largely resistant to stem rust.

When we consider that with even as low an increase as two bushels per acre, we would secure an additional crop of 3,500,000 bushels for the whole Province, which, at 50 cents per bushel, represents \$1,750,000 more for our farmers, we gain some idea of the value of these new varieties. But, to their superior yield, we must add superior quality and the greater certainty of securing a crop season after season to realize their true value.

Red Clover

Seeded with timothy and alsike, Red Clover occupies 600,000 to 800,000 acres each year and is our most important leguminous hay crop. The chief hazard of this crop is winter killing. Our new variety, DOLLARD, is very much hardier than commercial Red Clover. It is an early two-cut type, and is now being multiplied so that it may be available to farmers on a commercial scale. Its extended use will undoubtedly increase the yield and decrease the uncertainties of the clover crop in the Province.

Timothy

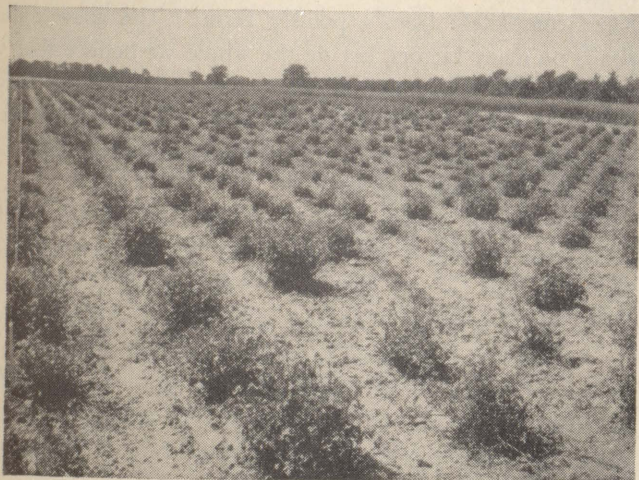
Being grown on over 3,000,000 acres and constituting the most important hay crop in Quebec, any improvement in yield or quality is bound to be of great importance. One of the chief causes of poor quality is too late cutting. When the crop consists of a single variety, the period over which good quality hay can be made is very short, and late cutting cannot be avoided. DRUMMOND, being about ten days later than commercial timothy, by its use on farms would permit the spreading of the harvest over a longer period. In addition, this variety is a higher yielder and is resistant to rust.

Corn

Those areas in the Province with short, cool seasons are not able to secure satisfactory or regular yields with the varieties found satisfactory in districts with a longer growing season. ALGONQUIN was produced to meet these conditions, in addition to which it produces an abundance of fodder with a high percentage of ears, making a silage of excellent quality. The keen demand for seed from the Provincial Seed Farm, even at \$6.00 a bushel, indicates its popularity. The demand is three times in excess of the available 500 bushels produced annually.

Swede Turnips

In a very few years, our LAURENTIAN variety has risen to a position of high popularity — definitely the most popular variety for table use on account of its mild, agreeable flavour. It is a very smooth, purple top variety with yellow flesh. It produces roots very uniform in size, making a high percentage of roots available for sale and resulting in greater profit to the grower.



A red clover breeding nursery where new strains are compared for hardiness, disease resistance and other desirable qualities. From such nurseries new varieties are developed.

Strawberry Revenue \$665,000.

The 1945 strawberry harvest in Quebec totalled 3,500,000 quarts, an increase of 71% over the weak crop of 1944, which accounted to 2,044,000 quarts.

With prices at 3c per quart less than those of two years ago, this decrease was more than made up by a higher production, so that berries sold at 19c per quart, totalled \$665,000, whereas in 1944, the value of the crop was \$429,000.

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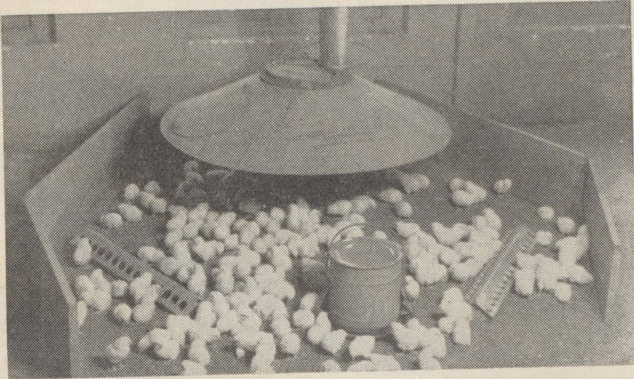
Share with the hungry!

Food Information Committee
of
THE GOVERNMENT OF CANADA

Caecal Coccidiosis of Chicks

by W. E. Swales*

Modern methods of raising chicks in incubators and brooders have destroyed their natural immunity to coccidiosis, but the new sulpha drugs, properly used, can probably control this disease.



These are worth saving.

Caecal coccidiosis is a disease which appears to thrive under conditions of modern poultry husbandry. In the older days, when natural brooding was the rule, the chicks were exposed to a few parasites during the first few days of their lives by following a roving hen, and by the time they reached the age of four weeks they were immune. As the poultry business developed towards the immense industry it is today natural brooding gave way to mass production and artificial methods. Sanitation is now the necessary rule and as a result we rarely see diseases caused by worm parasites, and some of the important bacterial diseases have decreased. However, the protection of the young chick has resulted in a general lack of immunity to caecal coccidiosis in growing birds, and if they are suddenly exposed to many coccidia when three weeks or more of age they develop a serious infection which may cause a large percentage to bleed to death.

Caecal coccidiosis is a peculiar disease. If susceptible four-week-old chicks swallow a large number of the microscopic oocysts with feed or water let us say, for example, on Monday morning at nine o'clock, a very definite train of developments will follow. They will be well and active during all of Monday, Tuesday, Wednesday and Thursday, but on Thursday evening the alert poultryman may see a few drops of blood on the litter. On Friday there will be increasing signs of blood and by Friday evening an alarming amount of blood-stained droppings will be present. By Saturday morning there may be a few deaths, and all the infected birds will be pale and weak and show very little interest in food. The majority of deaths will occur on Sun-

day but by Monday noon the survivors will start to take more feed and will show more interest in life. By Tuesday morning the sick birds will definitely be much better and from then on there will be no trouble from caecal coccidiosis in that pen, even though the infection is always present. This picture is practically constant when all the birds are exposed to infection for the first time; under some conditions the exposure is not so general and some birds will get the infection a day or more later and so extend the subsequent developments in the group for more than the eight days described above.

One interesting feature is that if the owner first uses "John Doe's Coccidiosis Cure" on Sunday morning when so many deaths have occurred he is certainly going to give the remedy great credit for stopping the deaths. *The actual fact is that nature has by that time endowed the survivors with a degree of resistance that enables them to recover.* Hence the undeserved reputations of so many remedies and so-called flushes. If the remedy contains a useful food supplement that will increase appetite and help to build new blood to replace that which has been lost, it may have a tangible value in speeding recovery, even though it is not a cure and cannot be given credit for stopping the deaths.

What Can Be Done?

Two major questions will arise in the mind of the practical man. The first one is: "Can the parasite be eliminated completely from a poultry farm?" The answer depends on many factors, but on the whole we believe that it is impossible to eliminate it but it may be possible to keep down its numbers by sanitation and avoidance of overcrowding and dampness. At least these measures must be part of a programme of control.

The second question is: "Can we learn to live with coccidiosis in such a way that losses can be stopped and our birds will become immune?" The answer to this may lie in recent research concerned with new drugs. It would be very unwise to go back to earlier exposure of chicks, to uncleaned surroundings, although some farms may be able to reach a reasonable compromise by putting day-old chicks on floors previously used only by four or five-week old birds. The other methods seem to rely on the use of drugs and it is with this that the work of the Division of Animal Pathology at the Institute of Parasitology has been concerned chiefly. It is now known that if infected chicks are treated with certain sulphonamide drugs *as soon as bleeding commences*, almost one hundred per cent of the infected birds can be saved. The drugs that have been most successful in this regard are *sulphamerazine*, *sulphamezathine* and *sulphadiazine*, and it is hoped that at least one of them will be made readily available for use by the

*Division of Animal Pathology, Science Service, Dominion Department of Agriculture, Macdonald College.

poultryman in the near future. The method now recommended is to treat infected birds as soon as bloody droppings appear. One ounce of sulphamerazine can be thoroughly mixed into fourteen pounds of chick mash and given to the affected birds for three days. If a soluble form is available it can be given in the mash at the same rate or in the drinking water; in the latter case one ounce is dissolved in three Imperial gallons of water.

When one outbreak has occurred it is very probable that any later group of chicks will be affected, therefore a preventive method may be used. The younger group can be placed on litter that is known to be contaminated with the coccidia. The chicks are placed on the litter and immediately given mash containing half the amount of sulphamerazine or sulphamezathine, that is, one ounce to 28 pounds of mash or one ounce of a soluble form to six gallons of water. This protective treatment is kept up for six days and if the chicks were actually exposed to coc-

cidia they will, by that time, have developed a light or "controlled" infection and will be immune. It will be seen that this method relies on the chicks getting some infection during treatment, because the drug itself does not immunize them against infection acquired after the six days. Another sulphonamide, *sulphaguanidine*, also possesses the power of controlling the infection at the time it is being acquired and can be used likewise as a preventive agent as one-half per cent of the mash at the time of exposure and for six or more days.

Veterinarians will be able to supply the necessary sulphonamides in the near future. They are not cheap, as the treatment costs between two and three cents per chick. If they are used on a larger scale the cost will undoubtedly be reduced. At the present time the system can be used to stop severe losses, and as four week old chicks are usually worth over forty cents each, the system appears to be economically sound. It is not meant to replace other methods, but to supplement them when losses are imminent.

Centralization Creates a Problem

by J. E. Lattimer

The remedy for the wide variation in returns for farm producers in different areas is sought partly in certain definite national policies and partly in individual effort.

Centralization of people and purchasing power shifts markets for food, and causes a variation in price in different sections. This variation continues whatever the general level of prices may be. Uniform returns require continual reorganization of the farm business to meet changing conditions.

Shifts in population takes place only under pressure. Yet these shifts continue to occur. The movement is promoted by the centralization of industry, jobs and pay-rolls.

One result is the moving of markets for farm products. This develops a difference in price of farm products near markets, as contrasted with those produced farther from markets. This difference is considerable in the case of such a product as fluid milk, as contrasted with butter that may be produced at a greater distance from markets.

Dairy farming is the leading type of farming in Quebec province. The shifting of markets becomes, therefore, one of the most influential factors in the dairy farming business. How and why this shift takes place, the degree that it has occurred, and some suggestions for the solution of this problem, is the subject of this discussion.

Centralizing Citizens

The natural resources of soil and climate are not uniformly distributed either throughout the world or throughout any one country. The possibilities for farming vary tremendously from section to section. Other natural re-

sources are less evenly distributed. The result is that many people now live far from their source of food. This is such a modern development that changes during the present century are significant.

From 1901 to 1941 the shift of population has been marked in different section of the Province of Quebec. County figures of population are available and may be compared. During that period 4 counties of the province increased by 162.5 percent while 4 counties during the same period increased by only 6.4 percent.

Naturally, there was some reason why this shift in population occurred during this time. The 4 counties that increased the most rapidly were the urban counties. The proportion of urban to rural in the 4 counties that increased most rapidly was, in 1941, 10 to 1 in round numbers. In the 24 counties where the gain in population was lowest the urban proportion was 1 to 4 in round numbers. During the period people moved to urban areas where some industries are concentrated, in order to secure jobs.

Why do people move? People move for three main reasons. One is to get a job. Another reason is to get a steady job. A third reason is to get higher wages. These three reasons have exerted and are exerting a strong pull to densely populated centres.

In the last pre-census year, four counties of the province reported less than forty percent of the total population and slightly over half of the wage-earners and pay-roll. On the other hand twenty-four counties with almost one-fifth of the total population reported less than one-tenth of the wage-earners and one-twentieth of the pay-roll. In the sparsely settled areas where there are few industries other than farming, jobs are fewer and less steady and wages are

lower. The number of wage-earners to total population varied from 1 to 3 in the counties, to 1 to 8 in counties where jobs were fewer and wages lower.

Draining the Dollars

One of the methods of draining the dollars from distant districts is the recently expanded tax on corporations. Corporations do business over the whole country but have their head offices and pay most of their taxes in centres of population. As taxes on corporations increase and are passed on to the consumer, dollars are drained into centres of population. This result is confirmed by the loan quotas that time after time have amounted approximately to \$130 for every man, woman and child on the Island of Montreal and \$30 per capita for the rest of the province, which comprises roughly two-thirds of the population.

Moving Markets

Moving the people and the money moves the market for farm products. The past few years have demonstrated the need of increased purchasing power to increase consumption of food. Where population is dense, and earnings high, prices of those farm products that must be produced near the point of consumption are higher. Such a product is milk, for consumption in fluid form.

Milk Prices

Census returns give the records of numbers of cows milked, yield and value of milk for the year previous. These records reveal that in the four counties where population is centered and earning highest, the value of a hundredweight of milk at the farm was \$1.41, while in the

twenty-four counties farther from markets, the value was \$0.99. This is not the extreme range. The value in Pontiac County was \$1.04 and on Montreal Island it was \$2.13 per hundredweight. Even the cows sensed this difference in price. They are either clever or cunning. They refuse to give up or give down unless fully rewarded. The yield per cow was 3,930 pounds in Pontiac and 7,860 pounds on Montreal Island for the year 1940.

Returns per farm and per farm worker were much lower in those areas far from markets. The proportion with cars, trucks, and tractors was lower. The output per man and per farm was lower. Expenses also were lower, including the taxes. Taxes go to provide education and community services. The conclusion that forces itself upon anyone who studies the records is that standards of living are lower in areas far from markets.

The Remedy

A number of suggestions might be made to alleviate this condition. Among these are, (1) decentralizing of industry, (2) zoning of farm areas so that the farm type and practice may be adapted to the local conditions and (3) increasing the efficiency of production on the farm. The first two suggestions concern national policy and therefore must await government action. The third, namely, increased efficiency in farm production and marketing is in the hands of the farmer himself. This may be achieved through the establishing of larger units, raising the productivity of the soil and through better feeding and breeding practices improving the livestock efficiency.

Progress Towards Barley Blight Control

by R. A. Ludwig

Blight is a serious disease of barley. It is caused by a fungus or mould capable of attacking the plant through its entire life. A seedling blight, foot and root rot, leaf spot and head blight are produced. The fungus growing on the plant affects it by damaging its root system, thus impairing its ability to absorb water and nutrients from the soil, and by sapping its vital food materials that are required for development and the production of grain. Plants may succumb in the seedling stage or continue to develop in a weakened, unthrifty condition.

The fungus causing the trouble survives the period between crops either on the seed or on decaying vegetable matter in the soil. During the growing season it spreads from plant to plant either by means of its air-borne seeds or spores or by growing through the soil. Complete control would involve firstly, the elimination of the fungus from the seed; secondly, the elimination of the fungus from the soil; and thirdly, the prevention of infection by the air borne spores. If the first two of these were accomplished the third would result automatically.

Studies at Macdonald College have centered around the development of practical control measures. The first step in this work was a survey of the health condition of barley seed samples. This was carried on over a period of five years in order to determine to what extent diseased seed was a factor in the development of the disease under Quebec conditions. Only 25% of the samples examined were found to be free from the disease. Forty percent of the samples were moderately infected and the remaining 35% were heavily infected. The significance of these figures can be seen by comparing the germination of untreated lots of the seed with lots that have been treated to control the disease. An average of the data obtained from all the samples examined is given in the following table:

	Untreated Seed	Treated Seed
Percentage of samples having a germination of 90% or over	31	62
Percentage of samples with a germination between 80 and 90%	35	30
Percentage of samples with a germination below 80%	34	8

If the effect on germination were the only one the

situation could be remedied by increasing the rate of seed-
ing. This, however, is not the case as many of the plants
attacked in the seedling stage do not succumb but remain
as poor unproductive plants thus decreasing yield. Ceresan
treatment of the seed satisfactorily reduces the number of
these plants since it kills the fungus on the seed. The
formalin treatment, found satisfactory for covered smut
control, is ineffective. This has been amply demonstrated
by the results of field experiments carried out at 14 sta-
tions scattered throughout Canada. The following table
gives a three year average of the results obtained:

	Percentage Seedling Blight
No Treatment	51
Formalin Treatment	42
Ceresan Treatment	10

The need, then, for the use of seed that has been
either laboratory tested and shown to be disease free or
has been Ceresan treated, is obvious. This alone, however,
will not be sufficient as there is the fungus in the soil to
consider. Under laboratory conditions it may be eliminated
by sterilizing the soil, but this cannot be done in the field.
The only other alternative is that of crop rotation. The
barley blight fungus can grow in the soil but this growth
is less vigorous than that which occurs on the barley plant.
Consequently, in the absence of a susceptible crop, the
amount of the fungus in the soil gradually diminishes, and
although it is never eliminated, it reaches a level where
the amount of damage it causes is slight. Since control is
never complete we always have the air borne phase of the
disease to consider and even though seed treatment and
good rotation are practised the leaf spot and head blight
stages may develop in destructive amounts.

Another method of control that suggests itself is the
development and use of resistant varieties, a procedure
that has resulted in remarkable success with the rusts. A
barley disease nursery was established at Macdonald Col-
lege in the spring of 1945 with this in mind. Barley will
be grown continuously in this nursery under conditions that
favour the development of blight. Barley varieties and
selections will be observed for the development of the
disease. Varieties showing resistance will be selected and
used to develop new varieties combining resistance with
the other desirable agronomic characters. Results to date
show that the commonly grown varieties differ a great
deal in their susceptibility to the trouble and that the most
susceptible varieties have already been abandoned. No com-
pletely resistant varieties have yet been found. A number
of prospective varieties in the course of development by the
Agronomy department of Macdonald College offer promise
of being much more highly resistant than any of the com-
mercial varieties now available. More testing will be neces-
sary, however, before this method of blight control can be
regarded as anything but a promise for the future.

Powdered Milk Plant for Victoriaville

If the project presently under study by the farmers of
the Eastern Townships materializes, Victoriaville will soon
have a huge plant for the manufacture of powdered milk,
to operate on the cooperative basis. This, at least, is the
impression given by the recent transactions of about twenty
cooperatives in the counties of Megantic, Arthabaska and
Wolfe, which have been called upon to give their support
to the movement. At an initial meeting the cooperatives
declared themselves favorable to the establishment of such
an undertaking, and extended an invitation to district agro-
nomists to express their opinions. A meeting was therefore
called under the chairmanship of Ph. Granger, District
Agronomist, and, after studying the question, decided in
its favor.

Besides the agronomists of the counties of Megantic,
Arthabaska and Wolfe present at last Wednesday's meet-
ing were delegates of the Coop rative F d r e and Messrs.
J. L. Descoteaux, chief of Rural Economy, and Ernest
Dub , chief of the Extension Service, who represented the
Provincial Department of Agriculture.

The various problems which such a project presents
were duly studied the amount of raw material; the effect of
such an industry on farms, organization methods and the
work involved. This plant would be a cooperative of co-
operatives, the operating capital to be subscribed entirely
by the cooperatives and their members. Boards of direc-
tors of interested cooperatives will be called upon to give
their support to the project, which will cost about a half
million dollars.

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Let's Look at the Soil

by W. A. DeLong

A stone dropped in a quiet pool sets up expanding ripples. A man with a shovel fell upon the soils of Quebec; extensive effects followed in this case also. An account is given of some results of the later events which are of interest and profit to the farmer.

A knowledge of the past helps in understanding the present and, to some extent, in estimating the future. It may be news to some that the soils of Quebec have been under inspection for about twenty years. Consideration of what has been seen and of the results which have followed or are likely to follow from this inspection appears to be timely.

Just about twenty years ago a young Canadian returned to the chemistry department at Macdonald College after a course of study in the United States. Almost immediately he picked up a round-pointed shovel and started out to learn all that he could about the soils of Quebec, and, to learn to speak French. His great interest in the soil and his French accent made him a marked man. Many in the province have vivid memories of both characteristics. His ideas and activities have, in their turn, made lasting and beneficial impressions on the agricultural industry of Quebec. The young man was, of course, Dr. R. R. McKibbin.

Even as he commenced operations with his shovel Dr. McKibbin began to enlist the co-operation of workers in other departments at the College in laboratory studies on soils and in field experiments with crops and with fertilizers. Thus emphasis was placed on three basic phases of an intelligent soils programme. These are:

First, a knowledge of our soils as they are found in the natural and undisturbed state in field, bog and forest. Often a true picture of a soil can not be seen after it has been disturbed by cultivation. These true pictures are obtained by the men with the shovels, that is, the soil survey workers. They discover the kinds of soil we have and show, by means of maps, where these are found. The pictures seen provide, to the trained eyes of these workers, useful information about the uses for which the soils are best suited.

Secondly, a knowledge of the plant food content, the air and water relations, and the relative productivity of our soils. Information on these points may be obtained by study in the laboratory and in the greenhouse. The survey tells us how many soils we have and how much of each kind there is, as well as where each kind is to be found. By study in the laboratory more can be learned about each soil, and soils may be compared with one another. Useful

information also may be gathered by laboratory study of crops grown on different soils.

Finally, we need a knowledge of the actual behaviour of our soils in the field in respect of crop-producing power and of their responses to management and cultural practices. Carefully planned and conducted experimental tests in the field supply the answers in this connection.

During the ten years of his association with the College Dr. McKibbin enthusiastically urged and as energetically took part in all these lines of study. Some of the results obtained during that time and later are described below.

Progress of the Soil Survey

The first report of a systematic survey of Quebec was in the form of a Macdonald College bulletin which dealt with soils of the Eastern Townships region. Very soon thereafter, however, the provincial and the federal departments of agriculture were interested in extending the survey to certain of the bog soils of the province, then to soils of the orchard districts, and finally, to all the soils of Quebec. The day now is not far distant when this part of the programme, the systematic survey of our soil resources, will have been completed, and we shall have maps and reports for all sections of the province.

Among the more important benefits which already have resulted from these surveys are a definite knowledge of the extent and location of soils well suited to truck crops and to orchard fruits, and, equally important, a knowledge of the location of the boundary lines between these and surrounding soils not well adapted for the production of these crops. A further benefit which well may be expected eventually to result from the soil survey work is a more accurate and, in the end, a more equitable appraisal of land values. Banks, loan companies, and other financial institutions have been quick to appreciate the value of the soil survey in this respect. There seems to be no very good reason why a progressive farmer should not make use of soil survey information when he is in need of a loan to finance his operations. Either a farmer who is operating on a good soil, or one who is doing a superior job of production on a poorer soil, has, in soil survey evidence, strong support for a claim for assistance. It must be emphasized, however, that the full possibilities in this connection can not be realized until the second and third phases of our soils programme have advanced much farther toward completion. Progress along these lines necessarily lags behind that of the soil survey, since, we first must know what soils we have and where they are. We now are sufficiently far advanced with the survey to make it very desirable to speed up our attack in the other two directions. Plans for this

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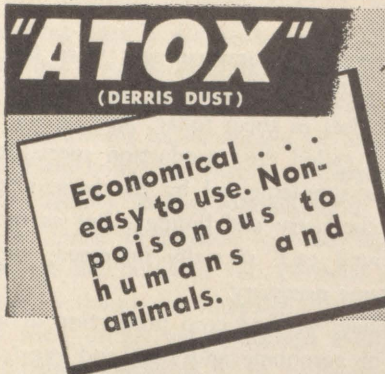


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are, in fact, well in hand and are, to a limited extent, in process of execution.

Progress in Laboratory Studies

Laboratory studies in relation to soils include the measurement of organic matter or humus content, of the need for lime and for fertilizers, of the soil structure and of the activity of soil bacteria. Chemical tests on crops and crop products also may provide valuable information respecting the nature of soils and of the effects of management. The results so far obtained in work of this kind have been of value in pointing the way to more satisfactory field practices from the standpoint of crop production. For example, tests showing the need for lime have resulted, following the application of ground limestone where needed, in very satisfactory increases in the production of hay, one of the major crops in this province. Laboratory tests also often have proved useful in picking out soils in need of fertilization. In relation to the results of laboratory tests for fertilizer need, it must be emphasized that while very low or very high results generally may be relied upon as indicating that fertilization is or is not needed, there is a wide range of values in between which are hard to interpret. Soils giving such intermediate test results may or

may not need fertilization or may need it for certain crops and not for others. For such soils the final answer is found in the response (or lack of it) to fertilization in the field.

With relation to tests on crops and crops products, these have shown that the crops grown on a soil low in available plant food, for example phosphorus, may be low in this plant food also. Further, tests on the manure produced when such crops are fed show that the manure as well may be low in this nutrient. Poor soil may lead to poor manure and thus establish an undesirable cycle. Work at Macdonald College actually has shown such a cycle to exist on a farm on the Greensboro loam, a soil which has been under study for some time and will be described in our next issue.

Laboratory studies on soils are proceeding and it confidently may be expected that they will continue to give information of first rate importance concerning such important features as the relative productive capacity of our soils, the relative ability of different soils to hold in available form the plant food of fertilizers applied to them, and their relative susceptibility to erosion.

In the next issue of the *Journal* we will come out of the laboratory and go into the field to see what is being done in the field experiments that are going on in this province.

Providing Agricultural Engineering Service for the Farm

by L. G. Heimpel

When our agricultural colleges were first established they were simple organizations as compared with the number of specialties in them today. At first there were only what may be called the "production specialties" of crops and livestock supplemented by the basic science subjects of physics, chemistry and biology. But as the volume of material around each specialty increased, additional subdivision became necessary.

Thus, today, we find crop production divided between field crops or agronomy and fruit and vegetable crops or horticulture. Similarly, animal production has been subdivided into the strictly animal and poultry branches. More recently supplementary specialties have been developed as, for instance, soils, which might be termed an off-shoot of the crop specialty in combination with chemistry and physics as applied to soils. Another example of the same tendency is the development of nutrition as a separate branch of animal production.

However, in addition to the production specialties, divisions of a general service nature were found necessary, such as Chemistry, Entomology, Bacteriology, Agricultural Economics and Agricultural Engineering. While the last named is one of the more recent specialties, some of the earlier Agricultural Engineering departments in American colleges are nearly fifty years old. At Macdonald College this specialty was established as such in 1918. Agricultural Economics, which bears a similar relationship to the farming industry, was established as a department at Macdonald College in 1926.

"General Service" departments such as these have a wide field of interest and application. Any form of engineering science may be described as applied physics, and Agricultural Engineering consists largely of the application of the laws of physics to the solution of all kinds of structural and mechanical problems of the farm. The diversity of these problems becomes clear when we recall that they include land drainage, farm buildings, power equipment, tillage and harvesting machinery, water supplies and air conditioning of stock structures and dwellings. The solution of problems arising from this diverse list requires the application of at least the elements of five engineering specialties, viz. civil, mechanical, hydraulic, electrical and sanitary engineering.

A glance at the accompanying chart shows that every kind of farm production presents engineering problems. It would seem only natural that there should be an engineering specialty in this industry. In a barn, for instance, the animal specialist knows what he wants built into the stable; the agronomist knows what is best in the way of storage space for crops, but both animals and crops are housed in

the same building. Shall both of these specialists be trained in building design and construction in order to handle their particular parts of the barn? Again, the matter of water supplies involves all livestock structures, the farm home, drainage and irrigation. To take care of the problems involved, a knowledge of hydraulics is necessary and one man trained in this subject as applied to farming should be able to prescribe for all of them. Viewed from this angle it is rather surprising that this general engineering service to farming was not established much earlier.

Application Most Important At Present

It is generally recognized in agricultural college work that there is usually a considerable lag between the appearance of a new problem and the perfecting of its solution. This is to be expected, particularly where the problems are of a biological nature. However, in the application of better engineering to farming this is hardly true. Of course, there are engineering problems awaiting solution, but what is far more important today in the improvement in farm practices is such things as building design and construction, the more effective use of power, machinery and labor, and the improvement of living conditions on the farm. The immediate need is not the discovery of new ways of doing things, but rather the application of better practices, already well known, on perhaps the majority of farms.

Agriculture is often referred to as an industry employing more energy, in the forms of animal, engine and electric power, than any other industry in the country. However, the fact that a large percentage of this power, in some cases nearly one-half, is wasted should provide food for thought rather than an occasion for boasting. Much power on farms is lost or wasted because of the poor mechanical condition of plows and other tillage machinery, as well as that of every kind of harvesting and processing machinery. Again, many farms are over-powered, often through the purchase of tractors in addition to a nearly adequate horse force, or the purchase of tractors which are larger than necessary. Others have tractors larger than necessary for the machinery used with them. Everywhere one can find tractors, engines and the equipment they operate in such condition that the cost of power is much more than it should be, to say nothing of the loss caused by poor work. Too frequently, also, one finds buildings so poorly laid out that work done in them consumes much more time and labor than should be required. To promote the more effective use of equipment now on farms, therefore, has long been the policy of the Department of Agricultural Engineering at Macdonald College.

During the past twenty-five years there has been a

steady increase, from year to year, in the number of requests for assistance with farm engineering problems until, today, it is somewhat of a task to take care of them. It has become necessary more and more to resort to multigraphing of information for which there are repeated requests, until there now are kept on hand several hundred items of such material, as well as standard plans of buildings and home-made farm equipment. Insofar as our relations with the farming public are concerned, this information and plan service is the outstanding development of this department of the College. Well over 700 plans and pieces of literature have been supplied to farmers during the past year. A small charge is made for the plans and circulars, thus making the service self-supporting. A plan list is published from time to time and copies are available free of charge.

Production Equipment Permits Standardization

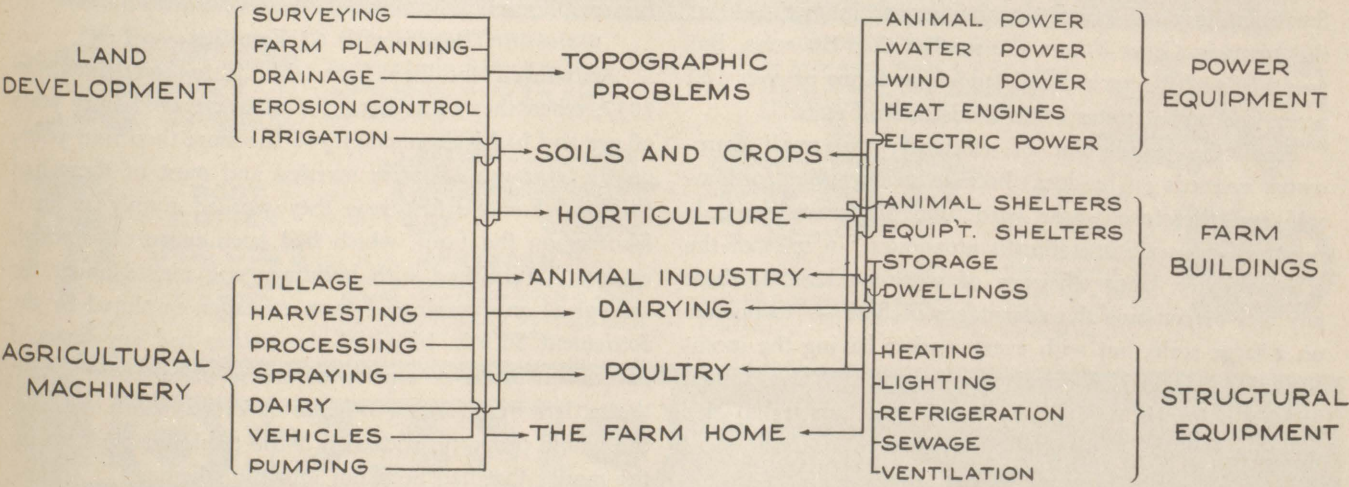
In the matter of production buildings, such as barns, piggeries and poultry houses, it is interesting to note the differences in design and type in different parts of the country. In individual communities barns and other buildings are often of the same type — unfortunately not always good and too often definitely bad — which makes one conclude that the dictates of custom in farming are stronger than those of reason and thoughtful consideration. However, livestock buildings can readily be standardized, it

being reasonable to assume that, once a "best" type of stable has been agreed upon, plans should be standardized on this basis.

Farm dwellings are a different matter, however, and with them too much standardization would result in a drab sameness in the appearance of the countryside. There are certain essential features which should be included in the plan of every farm home, but their actual arrangement depends on many factors, such as topography of the site, the position of the house in relation to other buildings, the type and size of the building and personal preferences. From a utilitarian standpoint standardization of design or similarity in such things as production buildings, farm machinery and automobiles is to be welcomed as this is usually an indication that the article is approaching perfection. However, this strictly utilitarian conclusion should not be applied to the dwelling house.

In the future it is not likely that engineering problems in farming will become fewer or easier of solution. Building materials, once available on almost every farm, will have to be purchased and the cost will likely be high. The farmer will have to depend more and more on machinery and one's success as a farmer will depend to an even greater extent on the effectiveness with which he can use his machinery. It is very likely, therefore that engineering assistance in farming will assume increasing importance as time goes on.

AGRICULTURAL ENGINEERING
A
GENERAL SERVICE TO AGRICULTURE
AGRICULTURAL
PRODUCTION





CO-OPERATION AND MARKETING

A page of interest to members of farmers' co-operatives

An Experiment in Co-operative Farming

by J. B. Bedell

A Canadian veteran describes an experiment in co-operative farming which he visited in Wales, and in so doing gives some useful information on this much discussed question.

ANYONE who has thought seriously about the future of Canadian agriculture must have wondered whether the family farm can long continue to be the typical productive unit in this country. It has been our ideal, from the earliest settlements, that each farmer should own his land, work it by himself with his family and perhaps a little hired help, manage it with his own wisdom and prosper accordingly. But just because we are familiar with this model of farming we should not overlook the facts that people in other countries have quite different notions, and that agriculture, like any other industry, is subject to irresistible change in this changing world.

In Britain, for example, the typical farm is rather different from ours. Much of the land is rented, not owned, by those who manage it; and most of the work is done by men who neither own nor manage, nor have much prospect of doing either —

"Those Englishmen, slow, stubborn, kind,
Farm-laborers, time out of mind,
Who, with odd gurgles, growls and clicks,
Stacked the slain Summer into ricks . . ."

Small-holdings, of course, are numerous; in fact, half of the farms in Great Britain are smaller than 50 acres. But two-thirds of the agricultural land is in farms of over 100 acres, and some estates cover thousands of acres.

From the stand-point of efficiency, the small farm-owner succeeds (if he does) because he is working for himself and therefore works hard; the big estate succeeds because large-scale operation is economical, in spite of the relatively low labor efficiency of wage workers. Is there any way to combine the advantages of both — to operate on a large scale, but with every worker having the incentive of an owner? A novel experiment in Wales, visited by the writer in 1944, may provide an answer to this question.

Miners Go Farming

In the 1930's the coal industry in Wales was stagnating in a chronic depression. Thousands of miners were out of

work and had been for years. The Commissioner for the Special Areas (the "derelict areas", that is,) promoted the Welsh Land Settlement Society, a group of prominent Welshmen which undertook, with government loans, to organize the settlement of unemployed miners on the land, where it was hoped they might become self-supporting instead of existing on the dole. Five large farms were organized in different parts of Wales, varying in size from 200 to 850 acres, and settled with from 27 to 80 families.

One of these farms will serve as an example, since all are on practically the same pattern. In the Vale of Glamorgan, near the ancient village of Llantwit Major (said to be the birth-place of St. Patrick), where the picturesque ruin of Boverton Castle stands overlooking the fields down to the shore of Bristol Channel, lies the 750-acre farm of the Boverton Castle Co-operators Limited. The settlers' homes are grouped around a grassy square a short distance from the highway. Each is a comfortable new six-room dwelling with hot and cold water, modern sanitation, and a small garden — advantages that are lacking in a large proportion of British (not to say Canadian) farm laborers' homes.

Began with 67 Families

Sixty-seven families form this little community. In 1937, when they came here, the men averaged forty years of age and had been unemployed for more than four years, on the average. All were married and most of them had children. For the first year they worked simply as hired laborers on the farm, which had been prepared, stocked, equipped, furnished with buildings and placed under the control of an experienced farm manager employed by the Settlement Society. None of the settlers had any financial investment in the enterprise, of course. After about a year, the settlers were formed into a co-operative, which took over the whole property, and with it the total indebtedness for the money that had been put into the scheme.

Thus, through their elected management committee, the co-operative members began to exercise control over

the appointment of the manager and his assistants, and to take part in the running of the farm. The Welsh Land Settlement Society, however, retains a considerable power of supervision and control, for the time being. Year by year the co-operative is paying off the initial loan, with interest; at the end of twenty-five years the farm will be free from debt, and the co-operative entirely "on its own".

At first the farm specialized rather narrowly in the production of cabbages, savoys, brussels sprouts and other similar crops, which were sold to wholesale dealers in the cities. War conditions, with scarcity of fertilizer, brought a change in the management program: sheep, cattle and swine were brought in, and more land was devoted to grain, potatoes and forage crops. Work is distributed fairly well throughout the year in this climate, and generally the men, working in groups under the leadership of field foremen, are able to cope with it; but in the busy seasons the boys and some of the girls and women come out to help with the hoeing, harvesting and packing for market, earning their shilling an hour.

Labour Paid Prevailing Wage

Members are paid the prevailing wage established for farm labor in the county, and every Friday is pay-day. They pay a low rental for their houses, and there is a twice-weekly free issue of vegetables for each family's own use. Specialists are on a yearly salary — the manager, his assistant who attends to the marketing, the green-house expert who looks after the six acres under glass, the stockman and the field crops superintendent. Field foremen's wages are a little higher than those of ordinary members; the latter were earning in the neighbourhood of £200 per

year, or considerably more for those who put in much overtime.

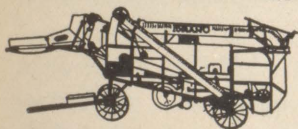
At the end of each year, after a thorough accounting and auditing, the surplus is distributed. All wages, salaries, rents, expenses, interest, sinking fund and reserves having been provided for, the balance is paid over to the members, including those on salary, in proportion to their year's earnings. There has always been some balance to distribute, even in the early years. By 1942 the yearly dividend or bonus was 90% as much as the members' other earnings, on some farms; one farm paid from £200 to £600, with an average of £282 per member. Thus the workers on the co-operative farms secured about twice as much money for their year's work as similar workers on other farms, and built at the same time a stake for themselves, or their sons, in the future of the farm.

Besides the co-operative farms, the Welsh Land Settlement Society set up, about the same time, several hundred small-holdings of five to ten acres, with a house on each. However, out of some 1600 settlers placed upon these, less than 350 remained in 1943.

No one would maintain that the type of co-operative farm described here would necessarily suit the Canadian scene. But it presents a challenge: can farmers in Canada, by carrying co-operative principles and methods into farm management, succeed in doubling their labor income and improving their standard of living as these Welsh miners have done? Can we develop a type of co-operative farm that will permit land and equipment to be used to full advantage, allow the members to concentrate on what they can do best, and provide a sounder basis for rural community life?

FORANO

FARM SPECIALTIES ARE RELIABLE



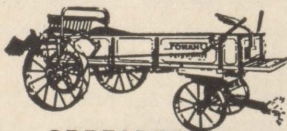
ALL-STEEL THRESHER

The Forano All-Steel Thresher is our pride, particularly good performance, quality and quantity; secondly, because it is a well built machine; thirdly, because it has a good appearance.



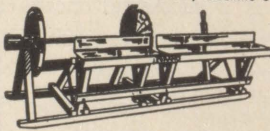
ROOT CUTTER

Forano Root Cutter can be driven by hand or motor. It is roller bearing mounted, rendering it easy to operate.



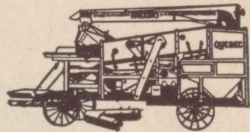
SPREADER

The Forano light weight and light draft Manure Spreader, with a capacity of 40 to 45 bushels, has a wide reputation for its performance with two medium weight horses. Maintenance cost is very low with a Forano Spreader.



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The Forano-Quebec Thresher is a well known machine, long appreciated for its simplicity, performance and low price; characterized by a patented screen made in two inversely operating parts — the only machine of its kind.

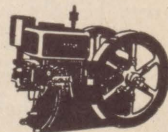


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The stationary Gasoline Engine is gradually regaining the confidence of the farmers because time has proved that slow speed stationary engines last a lifetime without trouble. The Forano is an old timer still on the job.

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Buy a Forano Cordwood Saw Frame. It is simple — heavy — well made and will last a lifetime.



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Gracefield Co-op Improves Position

167 members, a business turnover of \$162,000, net savings of \$4,195 and total assets of \$27,000 were reported to the recent annual meeting of Gracefield Cooperative Creamery.

Father Poirer of Blue Sea appealed to the farmers to respect and co-operate with one another and to pool their educational, intellectual and financial resources in order to help feed the starving people of the world, at the same time raise their own social and living standards.

W. J. Delaney gave a brief summary of the growth of Co-ops in the district, congratulated the Society on the sound financial condition of the company and also asked the members to keep striving to make this movement a universal one, as also did Mr. Russell Baker, who brought the sincere good wishes from the Co-operative at Maniwaki.

Mr. Charron of the Co-operative Federee, gave a word picture of the livestock feed situation in Canada and advocated careful feeding and also asked the farmers not to hoard feeds that are scarce.

Joan McConnery was re-elected president, Oscar Courchesne, Donat Roy, Alphonse Latourelle were re-elected directors. Jules Marois replaces David Parker as director. Daniel Rochon is Manager and Secretary.

U.S. Co-ops Win Round in Tax Bout

Washington, D.C. — The Small Business Committee of the House, which conducted a thorough investigation of U.S. cooperatives and their taxation as a result of the anti-cooperative Nat'l Tax Equality Association's propaganda and lobbyist demands for co-op-smashing tax legislation, issued its report last week. The report not only flatly denies the government's right to tax co-op patronage refunds, but enthusiastically endorsed the co-op way of doing business. It got the unanimous approval of the 9-man committee. A Coop News Service summary of the report follows:

The Cooperative movement is a successful means of combating monopolistic concentration, and as such, is a very healthy addition to the American economy.

2. The theory, widely spread by NTEA and other co-operative enemies, that the Cooperative movement is seriously endangering other economic forms of business, can be utterly disregarded.

3. Cooperatives are only agents for member owners and the money received by cooperatives belongs to the member owners only. Thus the committee destroyed the contention that patronage returns could be taxed.

4. Advantages enjoyed by farm cooperatives which are tax exempt do not exceed the disadvantages the farm co-operatives have to assume.

MARKET COMMENTS

The beef shortage has displaced the butter shortage as front page news. This weakens the argument that one of the reasons for the butter shortage was the expansion of beef production at the expense of dairy output.

The beef shortage has been explained as seasonal. Such seasonal shortages may be due to lack of both quantity and quality of feed available. It costs more to produce either beef or butter during the winter months. Unless prices are sufficiently higher at this season of the year to justify profitable production — output of either of these things may be even more irregular than they now are.

World Food Supplies

The world's good luck in the matter of the seasons seems to continue. An early spring and pasture season is now assured. The winter wheat crop of the United States suffered very slight damage and another huge crop is in prospect. Argentina and Australia are harvesting larger crops than during the recent drought period. The export surplus of Argentina for 1946 is estimated at 100,000,000 bushels. This is only one-twelfth of what importing nations are reported to need. If the estimates of world import needs be correct, then, the progress of the wheat crop in Canada and on this continent will be watched this season with very keen interest.

Trend of Prices

	April 1945	March 1946	April 1946
	\$	\$	\$
LIVE STOCK:			
Steers, good, per cwt.	12.53	13.15	13.05
Cows, good, per cwt.	9.27	9.70	9.80
Cows, common, per cwt.	7.58	7.15	7.60
Canners and Cutters, per cwt.	5.77	6.43	6.48
Veal, good and choice, per cwt.	13.03	15.38	14.47
Veal, common, per cwt.	9.35	13.60	12.10
Lambs, good and choice, per cwt.	7.00-12.00
Lambs, Common, per cwt.	8.58	10.75
Bacon hogs, Dressed B1, per cwt.	17.80	17.97	19.26
ANIMAL PRODUCTS:			
Butter, per lb.	0.35	0.36	0.40
Cheese, per lb.	0.21	0.22	0.22
Eggs, Grade A, large, per dozen	0.35½	0.36	0.35
Chickens, live, 5 lb. plus, per lb.	0.29¾	0.29¾	0.30½
Chickens, dressed, Milk fed A, per lb.	0.37	0.36¾	0.37½
FRUIT AND VEGETABLES:			
Apples, B.C. Winesaps Extra Fancy, per box	4.00	4.09
Potatoes, Quebec No. 1, per 75 lb. bag	1.65-1.85	1.90	2.00
FEED:			
Bran, per ton	29.00	29.00	29.00

Serving the Poultry Industry

by W. A. Maw

Meat studies have for many years received the main emphasis in the research program of the Poultry Department at Macdonald College. Since the greatest possible yield of edible flesh that can be economically produced is the aim of the poultryman, special attention has been given to each of the main factors concerned. Among these, is body conformation. An important point, also, is the effect of cereals upon finish, as well as the methods of fattening.

Among those things which a bird is born with, breed size and the rate of growth of the chick have proved to be of greatest importance in determining the size of the saleable carcass. A compact body type, with resulting plumpness, was found to follow the male parent possessing these desirable characteristics. Similarly, it was found that male birds, characterized by an extreme length of body and shank, resulting in a reduction in percentage of edible flesh, equally passed on these undesirable qualities to their offspring. This emphasizes the great importance of selecting a male bird of the correct type to head the flock.

With respect to those things that are affected by breeding and management, outdoor confinement gave the best gains, through increased feed consumption. It was also shown that three feedings daily were necessary to produce the heaviest and most efficient gains.

A study of the effect of cereals upon carcass quality revealed that high fibre reduced gains and, therefore, yellow corn which is low in fiber, was generally superior for production of fat in meat stock. As corn tends to produce a highly colored body fat, experiments were undertaken with bleaching agents to obtain the desired milk-fed finish. Of these, bone char proved most efficient.

In addition to these meat studies, other timely nutritional projects have been carried out. The need for replacement of feedstuffs in wartime prompted research on dried milk, yellow corn and oyster shell. It was shown that the two former ingredients were completely replaceable in chick starters by proper amounts of fish meal, dried brewers' yeast and wheat. Calcium supplements, such as Co-Quina shell, local limestones and, to some measure, Quebec mollusk shells, can suitably replace oyster shell for laying hens.

Another project had to do with a condition known as "gizzard erosion". Still another was concerned with studies in the stability of vitamin D, and another with phosphorous utilization.

While it is clear that these studies have assisted in a better understanding of some of our problems, it is very evident that constant study and research are necessary to enable our poultryman to maintain their position in a highly competitive industry.

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Founded in 1906

In 1906 Sir William Macdonald, a successful business man, educator and philanthropist, founded, equipped, and endowed Macdonald College to serve a three-fold purpose: to train the young men of the country in better methods of farming and in the science of agriculture; to teach young women the art and science of homemaking; to give the highest possible type of training to the young men and women preparing themselves for the teaching profession in the elementary and intermediate schools of the Province of Quebec.

The college houses the Faculty of Agriculture of McGill University, with which is included the School of Household Science, and provides accommodation for the School for Teachers.

The college is adequately equipped, to carry out the ideal of its founder; the enrichment of rural life through the improvement of agriculture, the advancement of education, and the training of future wives and mothers in the art of home-making. Toward the realization of this ideal all the energies of the college are directed.

Agriculture

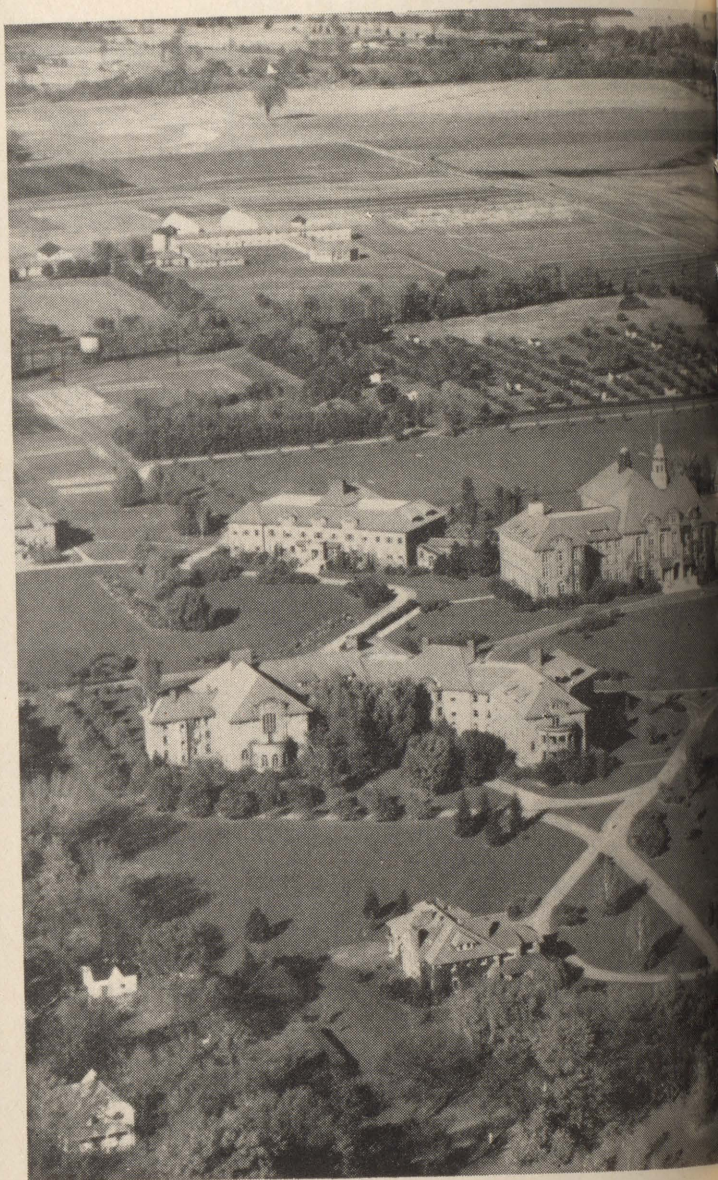
The Diploma Course is a practical course of two winter sessions for those who desire to fit themselves, with the least possible expenditure of time and money, for the complicated business of farming. The course lasts from November 1st to April 1st each year.

For those of high standing who desire further training, a third year is provided, which consists partly of course work, partly of directed study and coaching. Only a limited number of students are accepted each year for this advanced training.

The Degree Course is a four year scientific course which leads to the degree of Bachelor of Science in Agriculture, B.Sc. (Agr.). It is provided for those who intend to take up agriculture as a profession with the ultimate aim of entering the fields of research, of teaching, of commerce, or of going into farming equipped with the latest theoretical and practical knowledge with which to carry on a successful enterprise.

Graduate Courses. There is a steadily increasing demand in the field of scientific research in agriculture for men with advanced degrees. Macdonald College, through the Faculty of Graduate Studies and Research of McGill University, has been a pioneer in giving graduate instruc-

Entering Its Fortieth

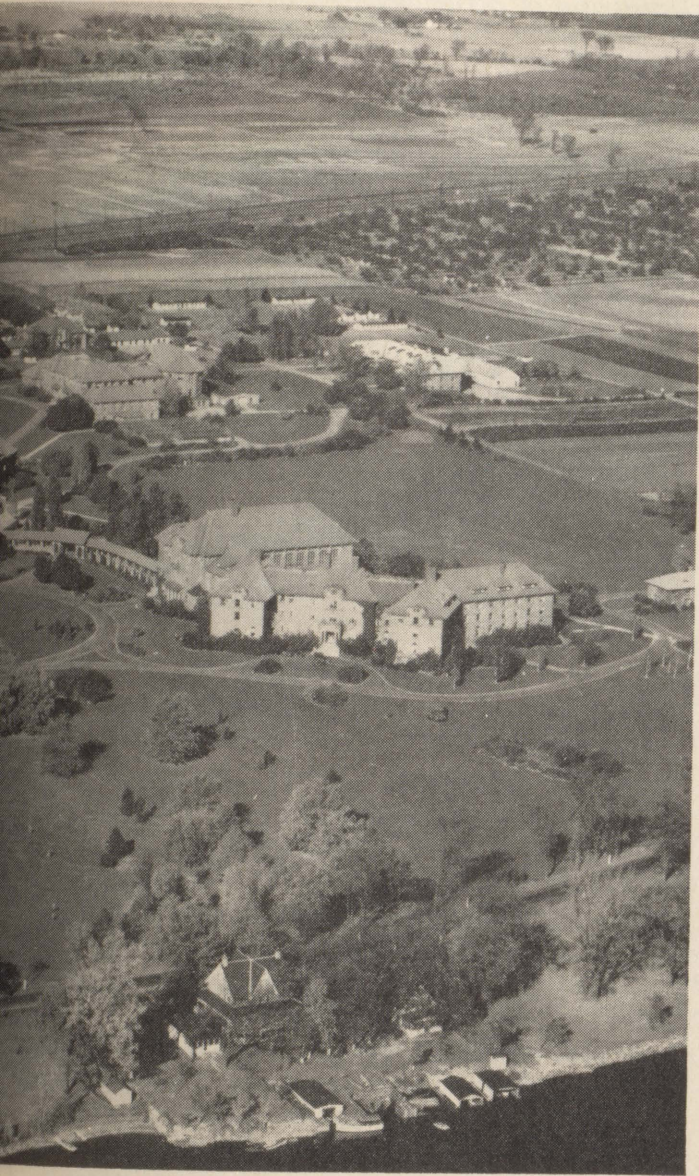


— Macdon

The theme of this special issue of the *Journal* is the role of science in agriculture, and in keeping with this thought we are publishing a number of articles in which we show how the work being carried on by scientific workers at our agricultural colleges is of vital and practical value to the farmer.

Much of the work which forms the basis of these articles was carried out in the buildings and fields in the

Year of Service



College —

picture above. Here new varieties have been developed, new methods tried out, new ideas learned. Here hundreds of students have come for training, and have left as competent agriculturists, household economists and teachers. Here advice and assistance is freely given to all who request it.

Thus, in its research, its student training, and its extension work, the College pursues the ideal of its motto, "Mastery for Service."

tion in agriculture. Work leading to the degrees of Master of Science (M.Sc.) and Doctor of Philosophy (Ph.D.) is offered in agronomy, nutrition, bacteriology, chemistry, entomology, horticulture, parasitology and plant pathology.

Household Science

Household Science courses not only prepare students for the activities of the home, but also enable them to take their place in the outside world as qualified dietitians in hospitals, restaurants, hotels, etc., as nutritionists in the fields of public health and social service, or as teachers of household science subjects in schools and colleges.

Two different courses are offered. The "Home-maker" course lasts only one year and is largely practical. In addition to the work in household activities the students are given instruction in chemistry, bacteriology, and physics, with practical application of these sciences to home life.

The course which leads to the degree of Bachelor of Science in Home Economics B.Sc. (H.Ec.) lasts four years. Most of the time in the first two years is devoted, as in the B.Sc. (Agr.) course, to the fundamental scientific subjects, although a certain amount of work in art and in cooking is introduced. In the third and fourth years the domestic science subjects predominate, but courses in physiology, biochemistry, bacteriology, etc., are also included in the curriculum.

School for Teachers

To the School for Teachers is entrusted the responsibility of training teachers for the Protestant Schools of the Province of Quebec. All teachers, with the exception of those who are qualifying for positions in High Schools, come to Macdonald College for their training. The School for Teachers is the successor to the old McGill Normal School, which was transferred to Macdonald College in 1907.

The classroom work of the students is supplemented by actual teaching in the Macdonald High School, and in schools in Montreal and in other parts of the province; great emphasis is placed on this phase of the work.

A Summer School is conducted during July each year by members of the regular staff, assisted by outside lecturers; attendance enables teachers to work for permanent and advanced diplomas. In addition to this and the regular class work, many outside activities are carried on by the staff, co-operating with various organizations interested in educational advancement.



DEPARTMENT OF AGRICULTURE

*Activities, Plans and Policies of the Quebec
Department of Agriculture*

Quebec Livestock Breeders Meet

Delegates from eleven associated groups making up the Quebec Society of Purebred Livestock Breeders met in Montreal on April 11th for the second annual meeting of the re-organized Society. President Elie was unable to be present, and the presidential address was read by A. Lavallee. It traced the steps leading to the re-organization which took place last year, and stressed the fact that the aim of the present organization was to assist all breeders in the province to work together to solve their common problems. A tribute to the late Raoul Dionne was appreciatively received by the meeting.

The accomplishments of the meeting can best be summarized by reference to the several resolutions adopted.

The Provincial Government was asked to repeal Article 4 of the law which concerns stray livestock. The object of the law is to protect owners of purebred livestock from damage which they might suffer from stray grade bulls, but Article 4 provides that the law is applicable only in those municipalities which have passed enabling legislation. By revoking this section the law would be made applicable throughout the whole province.

Another resolution asked that the Society become affiliated with the Canadian Federation of Agriculture, and a third suggested the creation of a class for Brown Swiss at the Quebec Fair. It was also asked that the Quebec Department of Agriculture place a qualified photographer at the disposal of livestock breeders, that courses in animal husbandry be organized for sons of farmers who are members of the Society, and that the possibility of establishing centres of artificial insemination in the province be studied.

It was pointed out that despite the deduction of 2c per pound for non-castrated lambs, there has been not much improvement in the quality of lambs shipped and the Society decided to ask the Federal Minister of Agriculture to substitute ram grading for carcass grading.

The final resolution, asking that Dominion and Provincial authorities take immediate steps to see that the supply of feed for Quebec livestock shall not be reduced brought the most discussion of any before it was finally adopted. In spite of the fact that Western grain comes east under Dominion control, some of the delegates could not see why this resolution should not be addressed to the Provincial Government only.

Markets Studied

A study of markets and marketing is the programme to be undertaken by the Society during 1946-47, and in keeping with this the principal speaker at the meeting was



Some well known figures in the livestock world.

Mr. Henri C. Bois, general manager of the Co-operative Federee.

Mr. Bois exploded the idea that some farmers have that rich markets exist throughout the world that are just waiting for us to ship produce to them. This, he said, is not the case. Neither is it true that the devastated countries of Europe can absorb our production at approximately the same prices as are being received today. We will have to sell on a competitive market, and be satisfied to obtain what the market can afford to pay.

It takes organization and good methods to produce a good crop, and just as much organization is needed to sell it profitably. Here, he felt sure, co-operation rather than competition was the answer, and he took advantage of the opportunity to stress the services offered by the Co-operative Federee. The farmer insists on quality in the things he buys, and he should be just as keen to see that the products he sells are of high quality. Farmers must try, by every means in their power, to improve methods, organize their farms for the utmost efficiency of operation, and reduce costs while improving quality so that the competition from other countries, which will be felt more keenly in the future than in the past, may be met.

Officers Elected

Ernest Sylvestre will be the president for the forthcoming year, with A. Lavallee as first vice-president and L. P. Villemare as second vice-president. R. P. Sabourin continues as secretary and directors include Jos. Hebert, J. P. Beauchemin, J. Jargaille, S. J. Chagnon, J. A. Ste. Marie, W. Nichol, J. F. Desmarais and D. Giard.

Mexico Buys Quebec Ayrshires

The good reputation of our dairy cattle is making headlines outside the Quebec boundaries. During the past several years, besides the Canadian market, breeders had the American Market as an outlet and arrangements are actually under way for exportation to European ports. A new market is now open to us through the Mexican Farmers' Association, a society similar to that of the U.C.C. and which has just purchased from Quebec, 15 heifers sired by an Ayrshire bull. This transaction was brought about through the intermediary of Augustin Salvos of Mexico and S. J. Chagnon, President of the Quebec Ayrshire Society of Quebec.

Some of these animals are pure-bred and the balance are highly graded stock of splendid lineage. One is from the St-Hyacinthe region and the others were purchased in Berthierville and from the islands of St-Ignace and Du Pas.

The animals were chosen by G. L. Pelland, herdman for the St-Hyacinthe Dairy School, and Azellus Lavallée, President of the Ayrshire Breeders' Club of Berthier-Maskinongé. Consignors were as follows: Orian Roch, of St-Norbert; Paul Cournoyer, Ile St-Ignace, three head of cattle each; Louis-Marie Cabana, St-Cuthbert, 2; the Dairy School and Aurèle Gaudette, St-Hyacinthe, Olivier Désy, Berthier; Julien Polland, St-Norbert; Paul Savignac, Berthier, and Mrs. Edmond Farley, Isle du Pas, each one head.

Jean Nichols, Secretary of the Ayrshire Breeders' Club for St-Hyacinthe and Edgar Desmarais, of the Dairy School farm, were in charge of this shipment, which is a 10-day trip by rail from Berthier Junction to Mexico, via Montreal, Detroit, St-Louis and Laredo, (Texas).

Ormstown Plans Its Biggest Show

Never before have the officials of the Ormstown Exhibition commenced as early, laid plans as carefully, or felt so enthusiastic about a forthcoming show as they do this year.

Actually plans for the show, and the date, were decided at the annual meeting of the Live Stock Breeders Association of the District of Beauharnois on Nov. 28th in the Ormstown Town Hall. At that time a directorate of the following officials were elected; Messrs. Gilbert McMillan, Huntingdon, Que. Donald E. Black, M.P., Aubray, Que., Douglas Ness, Howick, Que., A. A. McCormick and W. R. Graham, Ormstown.

Then followed a second meeting to "set" the exhibition and Mr. McMillan was named Exhibition President, Donald Black, M.P., 1st Vice-President, Doug. Ness, 2nd Vice-Pres. and W. G. McGerrigle, Sec.-Treas.

The next meeting was a conference in Montreal attended by high officials in the American Horse Show Association, including Vernon G. Cardy, and H. J. O'Connell, and heads of many of the leading riding clubs and associations, and the following week Ormstown was represented at New York where the official dates were sanctioned by the American Horse Show Association. The next step was the meeting in Toronto co-operating with the Canadian Horse Shows Association, and the conference to decide upon the attractions at the Fair Association meeting there.

Next a meeting back in Ormstown was held to iron out the general programme for what is planned to be the "biggest show in history — we won't settle for less" according to Douglas Ness, who feels particularly enthusiastic about this years prospects.

Barley Growing Contest Announced

In the March issue we stated that the Dominion Brewers' Association would sponsor a nation-wide barley growing contest, and promised more details later. These details, as they affect the Province of Quebec, are now available.

The Deputy Minister of Agriculture, Jules Simard, points out that the Province of Quebec could increase its barley output by the simple method of using better varieties than are now commonly grown here. Vast quantities of barley are used by distilleries in Montreal and Quebec, but so far Quebec and Ontario farmers have not contributed very much volume of grain to this market. In order to take advantage of this contest, which will mean a total amount of \$3,300 in prizes for Quebec farmers, the Department has undertaken to organize barley growing contests in the following counties: Chateauguay, Beauharnois, Huntingdon, St-Jean, Iberville, Missisquoi, Laprairie, Napierville, Rouville, Shefford, Chambly, Verchères, Richelieu, Vaudreuil, Soulanges, l'Assomption, Joliette, Berthier, Montcalm, St-Hyacinthe, Bagot, Nicolet, Yamaska, Deux-

Montagnes, Argenteuil, Terrebonne, Laval, Jacques-Cartier and Hochelaga.

These 29 counties will be divided into 12 regions, and the successful grower in each region will receive a cash prize of \$200. In addition, there will be a provincial competition for the four best contestants of each region, with five prizes 3 totalling \$400. The four winners of this provincial competition will then compete again four similar contestants from Ontario for another \$500. of prize money.

One of the following varieties used. O.A.C. 21, Olli, Mensury, Montcalm. Competitors may use the harvest in any way they wish after the judging is completed, but no entry of any other than one of the above varieties will be accepted. The barley will be judged in the field and in the granary. The Department will pay any transportation charges on provincial and interprovincial exhibits, and some of the judges will be appointed by the Department.

Entries close on June 1st and your local agronomer can give you further details.

New Appointments

The Minister of Agriculture has recently made two new appointments in the Department. J. E. Lemire, since 1941 head of the extension service and as such responsible for the work of the agronomes of the province, will from now on be in charge of sugar beet production for the St. Hilaire Refinery. It will be his responsibility to organize a programme that will result in the maximum possible supply of beets for the refinery. In appointing Mr. Lemire, an experienced agriculturist and executive, the Minister once again demonstrates the determination of the Department to leave nothing undone to make the Quebec Sugar Refinery a success.

Mr. Ernest Dube has been named Director of Extension Services to replace Mr. Lemire. A graduate of Ste. Anne de la Pocatiere, where he obtained his B.S.A. degree in 1931, he was regional agronomer at Carleton-sur-mer at the time of his transfer. He began his career with the Department as instructor in field husbandry for the Sherbrooke district, then went to Rimouski until 1936, when he went to work with the Federal Farm Loan Bureau. He returned to the Provincial Department the following year as regional agronomer in Rimouski, transferring to the Baie des Chaleurs district in 1940, where he has been until this new appointment.

Record Chick Production

Cooperative and private certified hatcheries beat last year's record by half a million and that of 1944 by 300,000 by producing 1,526,371 chicks on March 21st last, according to the latest report published by the Poultry Division of the Provincial Department of Agriculture. This report covers 58 cooperative hatcheries and 78 private ones.

1,723,244 eggs were incubated by cooperative hatcheries to date, producing 1,091,222 chicks, a percentage of 63.32. Private hatcheries put down 653,530 eggs and obtained 435,149, a percentage of 66.58.

1946 should be an excellent year for poultrymen and the 1944 record may be beaten. Breeders ordered their chicks earlier than usual this year and hatcheries organized production accordingly. Quebec should be able to supply the local market and will also be able to supply its quota of eggs and fowl meat for the export market as well.

Turkey Raising to be increased

There is a huge demand for day-old turkey poults this spring in Quebec, and a production of 125,000 birds is expected. Though this is 25,000 more than last year, hatcheries which specialize in incubating turkey eggs will be able to fill only part of their orders.

In view of this situation, the Poultry Division has decided to organize new turkey raising centres, and to improve those that are already in operation.

The high quality of Quebec turkeys makes them deservedly popular with consumers, but although we sold, in 1945, three million pounds of turkey meat, this was only 15% of the total consumption in this province. It is evident that there is a market here which could be supplied by Quebec farmers.

Last year, 11% of the birds sold for the Christmas season graded "Special"; 58.3% were Grade A, 30.1% in Grade B and only 10.6 came into the C and D grades.

Mr. C. Montgrain Receives Masters Degree in Agricultural Engineering

As the use of power and machinery on farms increases, the need for education of farm users of such equipment is more and more in evidence. No one realizes this fact more keenly than the Corporation of Agronomes of the Province of Quebec, the organization whose members do the extension work among the farmers of the province. It is their policy to assist in the training of specialists in any field of agricultural work where such men are needed and already their efforts are bearing fruit.

Two years ago a scholarship was granted to Mr. Clement Montgrain, a graduate of Oka, to take post graduate work in Rural Electrification at Virginia Polytechnic Institute. He has recently received his Masters degree in Agricultural Engineering. At present he is adding still further to his experience by spending some time at Knoxville Tennessee with the famous Tennessee Valley Authority in Rural Electrification. Before returning to Canada he will spend some time in Washington, D.C. where he will work for the Rural Electrification Administration of the U.S.D.A.

Mr. Montgrain will, therefore, return to Quebec thoroughly prepared to act as a guide in the Rural Electrification scheme on which this province has embarked. Before going to Virginia he spent two years at Macdonald College where he specialized in Horticulture and Agricultural Engineering and received a Masters degree from McGill University. The Corporation of Agronomes is to be complimented on its far-sighted policy in aiding the training of such men and in their choice of a man like Mr. Montgrain for it.

The Corporation of Agronomes will hold its Annual Congress at Macdonald College, June 19 and 20 next. Prof. E. A. Lods of this Institution is President.

"How is your garden getting along old man?"

"Well, if the green things are vegetables, it's fine, but if they're weeds, it's terrible."



Bound for London, England, to participate in the international conference of farm organizations of the united nations, the delegation which will represent the Canadian Federation of Agriculture, Canada's national farm organization, have left Canada, sailing from Halifax on the Cunard liner Aquitania.

Object of the conference is the establishment of an international federation of agriculture which will be able to speak with one voice for the world's farm producers. One of the original suggestions for such a conference was made in November, 1942, by H. H. Hannam, President of the Canadian Federation. In 1945 the suggestion for a conference was further advanced by the visit of the delegates from the National Farmers' Union of the United Kingdom, who extended invitations to Canada, the U.S. and other countries to come to London for a meeting as soon as it could be arranged. The date was finally set for May of this year. The gathering will be held in Church House, London, commencing May 21, and lasting for ten days. Among other nations whose farmers will be represented are the United States, from where four national farm organizations will send delegates; France, Australia,

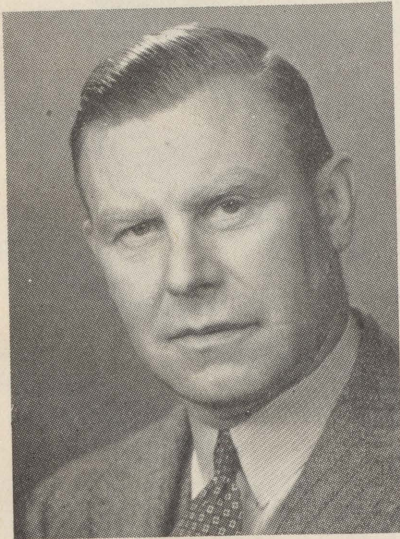
New Zealand, Norway, Denmark, the Netherlands, Brazil, Southern Rhodesia, Kenya, Luxembourg, Greece.

The Canadian delegates are pictured above. Beginning with the top row and reading from left to right, they are H. H. Hannam, leader of the delegation, W. J. Parker, first vice-president of the Federation and President, Manitoba Pool Elevators; J. A. Marion, of Montreal, second vice-president of the Federation and President of l'Union Catholique des Cultivateurs de Quebec; R. J. Scott, Belgrave, Ontario, a director of the United Farmers Co-operative, Toronto; W. H. McEwen, Moncton, N.B., Managing Director, Maritime Co-operative Services; J. H. Wesson, Regina, President, Saskatchewan Wheat Pool; Alex Mercer, Vancouver, general manager, Fraser Valley Milk Producers; Ben Plumber, Calgary, President, Alberta Wheat Pool; R. H. M. Bailey, Edmonton, President, Dairy Farmers of Canada; R. S. Law, Winnipeg, President, United Grain Growers; W. M. Drummond, Professor of Economics, Guelph Agricultural College, and economic advisor to the delegation; Kenneth Betzner, Waterloo, Ontario, President, Ontario Federation of Agriculture; and C. G. Groff, Secretary, Canadian Federation of Agriculture.

Nova Scotia Apple Growers Build First Cold Storage

by F. W. Walsh

Cold storage is the modern device for preserving quality and lengthening the marketing season. The first step in imparting greater stability to the Nova Scotia apple industry has now been taken in the establishment of an up-to-date plant.



F. Waldo Walsh, Deputy Minister of Agriculture for Nova Scotia.

with over 600,000 cubic feet of refrigerated space.

Cold storage facilities for Nova Scotia's primary products have been the subject of prolonged discussions and at least two delegations of growers and technical men have investigated cold storage plants in Ontario, British Columbia and the State of Washington, U.S.A.

Up to the present time, cold storage facilities in Nova Scotia are found mainly in creameries, dairies, fish processing plants and, to a very limited extent, in apple warehouses. With an apple crop ranging up to 2½ million barrels, there is only cold storage space available for some 70,000 barrels. Both cooperative groups and private individuals have provided some cold storage for poultry and eggs, but taking the whole output of perishable foodstuff there is relatively little cold storage space available to producers in the province, especially when some of the many uses of cold storage plants are listed, such as:

- (a) To provide a spread of supply and prevent a glut on the market with the usual depression of prices.
- (b) To hold produce against the time when there will be a demand for it with no local supply.
- (c) To hold produce in natural and unprocessed state for consumption in that state rather than in a processed form.
- (d) To maintain quality of produce at a higher level than is possible in natural storage.

THE first agreement has been signed for the construction of a cold storage plant by a producers' organization, under the new Nova Scotia Act, "To Provide Loans for the Establishment of Cold Storage Plants". Under the terms of this agreement, the United Fruit Companies of Nova Scotia will build a modern plant at Coldbrook, N.S.,

The Basis and Policy

The value of cold storage plants and the advantages they provide to the farmer are all accepted by producers and distributors alike and especially where the members of farmers' organizations perform both functions. The next question posed by interested parties was; how to do it? The answer to this query was built up by successive steps, first, by setting forth the basis on which the policy should be built; and, secondly, establishing the regulations under which it could be operated.

The first of these was based largely on the following conclusions:

1. That if Nova Scotia agriculture and fisheries are to keep abreast of the times and supply high quality products to the consuming public, it is necessary to have adequate cold storage facilities in the main centres of production. In the initial stages these would handle principally fruits, vegetables, poultry, eggs and fish.
2. To reap the greatest benefit from such cold storages, a reasonable outlay of money must be made by the producer organizations involved. And unless some financial encouragement is given in the way of a loan, many worthy organizations may find it difficult, if not impossible, to build a properly equipped cold storage plant. Should they undertake to build too cheaply or too small, the whole purpose of the project would be defeated.
3. The Federal Cold Storage Act is still available and it has been widely used by other provinces, but unless this province gives some financial encouragement to our primary producers it is possible that they may not be able to take advantage of the Federal assistance. On the other hand, if a provincial loan could be coupled with the Federal assistance, then the project would likely be attractive enough to interest the best producer organizations in adding cold storage facilities to their equipment for marketing farm produce and for storing perishable foodstuffs for the use of members themselves.

Federal Grant and Provincial Loan

To make it possible for producers' organizations to realize these ambitions, the Government of Nova Scotia enacted the necessary legislation under which the financial assistance available from the Federal Cold Storage policy could be supplemented by a loan from the Provincial Government. The amount of such a loan is limited to 50 per cent of the total cost of the plant and bears 3 per cent

interest. Repayment must begin not later than the third year after the loan is made and least half of the loan must be repaid at the end of ten years while the total loan period shall not exceed twenty years. All such loans are secured by a first mortgage on the property concerned. That is the basis of progress in cold storage development in Nova Scotia at the present time.

The loan is advanced to the builders of the cold storage plant in progressive stages; 10 per cent upon completion of the contract with the Minister; 30 per cent when the building is completed or, when being remodelled, is ready for installing the cold storage equipment; 30 per cent when cold storage fixtures and equipment are installed; and the remaining 30 per cent when the plant is in operation and the necessary mortgages, etc., have been completed.

There are certain other requirements concerning financial statement or budget of a year's operations that must be supplied to the Minister by the operators and builders.

Steady Expansion Foreseen

As already stated, the first contract has been signed. And while it is not expected that there will be unusual enthusiasm, yet there is every indication that there will be a steady increase in the cold storage capacity in centres where it can best serve the producers of perishable food products.

Other provinces, and especially Ontario and British Columbia, have gone in for cold storage plants in a big way and have demonstrated beyond question the value of such facilities. The matter of extending the marketing season for apples, for example, is demonstrated every day in every grocery store in Nova Scotia where B.C. apples are offered for sale in a sound, crisp condition many weeks after Nova Scotia apples have disappeared from the grocers' windows.

The Life of an Apple

The usefulness of cold storages in keeping apples is well illustrated by records published in 1942 by the U.S. Department of Agriculture, showing the storage life expectancy of Delicious apples at certain temperatures. The life of an apple held at 70 degrees was 18 days; at 60 degrees 27 days; at 50 degrees 45 days; at 40 degrees 81 days; at 36 degrees 120 days; at 32 degrees 210 days; and at 30 degrees 258 days.

Aside from keeping products in a fresh and palatable state for long periods, cold storage serves another very useful function in continuous marketing of any perishable product such as berries, fruit, poultry, etc. as it can be placed in storage for a few hours until the natural heat has been removed, after which it will stand shipping for longer distances and arrive in a fresher and more natural condition than when shipped direct without this pre-cooling period.

C.O.C.S. Niatox

"Niatox" is the designation of products containing DDT made by Niagara Brand Spray Co. Limited.

COMBINED FIXED COPPER AND DDT

C.O.C.S., Niagara Fixed Copper Fungicide, has given vegetable growers outstanding results in past seasons. Now it is combined with DDT for combined control of blight, and such pests as potato beetle and leafhopper.

FIELD TESTS SHOW THAT THIS COMBINATION ACTUALLY ASSISTS PLANTS TO PRODUCE LARGER CROPS OF HIGH QUALITY.

- Applicable anytime of day.
- Effective without the aid of moisture.

C.O.C.S. DUST

For potato, tomato, celery, melon, cucumber and other field crops requiring the use of a copper fungicide, by all means use C.O.C.S.

Ask your local grower's supply house.

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In addition to lengthening the marketing season and shipping radius of otherwise perishable products, cold storages have a wide application in preventing gluts of perishable products at the height of seasonal production. Quick-freezing of strawberries, for example, and holding them in storage makes it possible to enjoy strawberries and cream and shortcake in mid-winter.

It is believed by those directly concerned that this project is likely to contribute more to the stability of fruits and vegetable marketing than any other single facility used by the producers since the introduction of the refrigerator railway car.

The Macdonald College Study Outlines

These popularly-written study outlines are packed with information, presented in readable form with questions for study and useful references. The kits are made up of carefully chosen pamphlets giving up-to-date information.

GUIDE TO GROUP DISCUSSION. *10 cents a copy, \$7.00 a hundred.* This 40 page booklet explains briefly and clearly how to plan, organize and conduct various types of discussion. A copy of this Guide goes with each order for the following study outlines.

ANIMAL PRODUCTION SERIES: *A study in 5 units—price 30 cents; with supplementary bulletins, 40 cents.* In this series are discussed the general nutritive properties and individual peculiarities of the feeds most commonly used in the feeding of dairy cattle, sheep and swine. Attention is drawn to the nutritional requirements of the different classes of stock and it is pointed out how adequate rations can be prepared to supply these needs.

CROP PRODUCTION SERIES: *A study in 12 units—price 70 cents; with supplementary bulletins, 80 cents.* This deals with matters related to the maintenance of crop productivity at a high level — tillage, rotation, fertilizers and manures, weed control, seed, hay crops, pasture, grain crops, corn, alfalfa and silage making.

POULTRY PRODUCTION SERIES: *A study in 12 units. Price 75 cents; with supplementary bulletins, 85 cents.* This is a general analysis of the place and need of the poultry flock on the general farm; methods of stock selection and general management; poultry products as a cash crop on the farm; special problems of marketing the products.

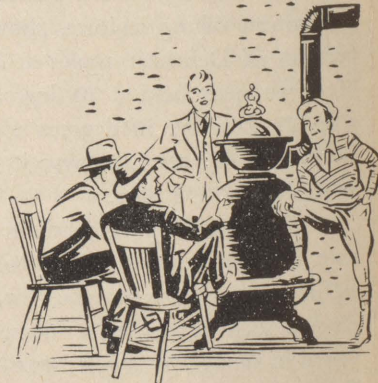
CO-OPERATION SERIES: *A study in 12 units. Revised and illustrated. Price 60 cents; with supplementary bulletins, \$1.00.* This is a study on the purposes, principles and possibilities of co-operation; the essentials to co-operative success; the function and organization of credit unions, consumers' and producers' co-operatives; problems of management; the place of education in co-operation and a brief treatment of co-operative medicine.

HOME ECONOMICS SERIES: *A study in 6 units. Price 30 cents; with supplementary bulletins, 35 cents.* This series emphasizes the diet as a factor in good health including the place of milk, cereals, grain products, vegetables, the protein foods, etc. It discusses the problem of planning adequate meals at moderate cost, analyzes the food budget and suggests suitable menus.

RURAL LIFE SERIES: *Education, Health, Recreation, in 6 units. Price 80 cents. (But residents of Quebec may obtain free by writing to Director of Protestant Education, Quebec, P.Q.)* Tells about the organization, management and how to improve our rural schools; how to improve the health services of people in rural areas; why rural people should develop better recreational facilities and how to do so.

ECONOMIC SERIES: *16 printed pamphlets, Price \$0.50 for the entire set. Published by the Canadian Association for Adult Education, 198 College Street, Toronto, Ontario.* These cover a number of specific problems of interest to the farmer. The nature of their content is indicated by the list of titles below:

1. Are there too many farmers?
2. Should Canada restrict the farming of sub-marginal land?
3. Will increased production benefit the farmer?
4. Should Canada encourage land settlements of immigrants?
5. Can we improve our taxation system?
6. How far will improved farm management methods help?
7. What does the farmer need in the way of credit?
8. Can the economic position of the farmer be improved through the medium of a government supported policy of research, experimentation and extension work?
9. What can we hope to accomplish through Fairs and Exhibitions?
10. Are government grading regulations and marketing services of value to the farmer?
11. What are the conditions necessary for the efficient marketing of farm products?
12. What can the farmer gain through organization?
13. To what extent can co-operative organizations solve the economic problems of the farmer?
14. Is any form of governmental control or regulation over the marketing of farm products necessary, desirable or practicable for Canada?
15. If some form of regulation is adopted, what should it be?
16. What shall we do about it?



Write now to the Macdonald College Journal, Macdonald College, Que., and enclose the necessary amount for any or all of the outlines.

How Weeds Reduce Yields

It is obvious that a vigorous plant of pigweed, lambs quarters, nettle, lady's thumb, a stand of sowthistle or quack grass occupies the space and uses the plant food and water that should be producing a useful plant.

Some idea of the harm that such weeds can do to cereal yields is shown by the results of an experiment made at the Dominion Experimental Station at Kapuskasing, Ont.

Plots were located with uniform stands of weeds. On half the plots the weeds were pulled while quite small, great care being taken to disturb the crop plants as little as possible.

The results over a period of years show that a medium infestation of shepherd's purse and nettle reduced the yield of the oat crop 13 percent. Other annual weeds are considerably more vigorous than the two named and would certainly do as much or more harm.

Quack grass and sowthistle were found to be much more detrimental, for during the same period they were found to reduce the yield of oats by 74 per cent, or to put it the other way, the presence of a fairly heavy infestation of these perennial weeds reduced the crop to one-quarter of what it would have been.

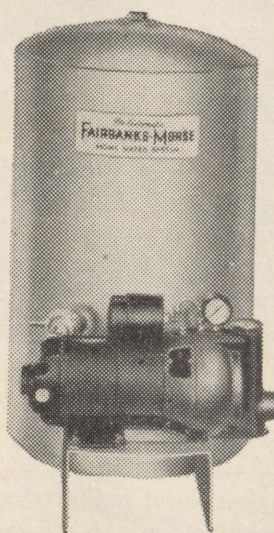
These results emphasize the need for cleaning the land and keeping it clean. Hoed crops, or partial summerfallow as a regular part of the rotation, well cleaned seed, carefully cut ditches, fence rows and waste spaces are practical means of keeping the weeds under control. To rid the soil of these pests means that maximum returns can be obtained from the land.

More Milk: Less Cows

In the United States, although milk production on the farms during 1945 was the highest in the 21 years for which estimates are available, the number of cows on farms showed a sharp decline. The production per cow averaged 4,789 pounds, an increase of 214 pounds on the 1944 figures.

More water with Less power with a **FAIRBANKS-MORSE** EJECTOR TYPE WATER SYSTEM

- FEWER MOVING PARTS
- COMPACT ● QUIET
- EASY TO INSTAL

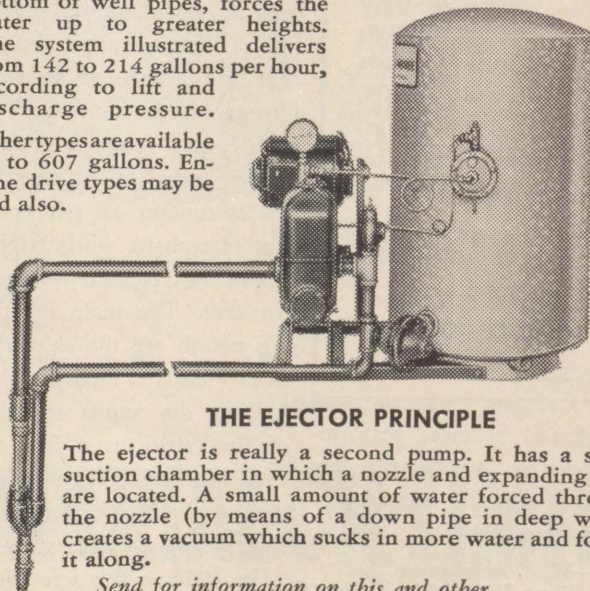


An ejector built into the pumping unit increases the water flow without using correspondingly more power, saving much in operating cost. There are no moving parts below ground, and hence the unit can be located away from the well. Severe tests by independent experts show conclusively that Fairbanks-Morse Water Systems have exceptionally long life.

FOR SHALLOW WELLS: (Lifts of 22' or less) Fairbanks-Morse Shallow Well Systems are single, compact units, shipped fully assembled. Rugged in construction. Centrifugal pump is simple in design with only one moving element. The ejector is part of the above-ground assembly. Self-priming and quiet running. Model shown here supplies 500 gallons per hour at open discharge, 450 at tank pressure of 20 lbs. (Figures are 15' lift.) Other sizes are made up to 1170 gallons open discharge. Non-electric systems are available for engine drive.

FOR DEEP WELLS: (Lifts of over 22') Fairbanks-Morse Deep Well Systems have a positive displacement pump, working to tank pressures up to 60 lbs. easily adjusted to needs. Ejector located at bottom of well pipes, forces the water up to greater heights. The system illustrated delivers from 142 to 214 gallons per hour, according to lift and discharge pressure.

Other types are available up to 607 gallons. Engine drive types may be had also.



THE EJECTOR PRINCIPLE

The ejector is really a second pump. It has a small suction chamber in which a nozzle and expanding tube are located. A small amount of water forced through the nozzle (by means of a down pipe in deep wells) creates a vacuum which sucks in more water and forces it along.

Send for information on this and other Fairbanks-Morse Full Measure Farm Equipment.

THE CANADIAN FAIRBANKS-MORSE CO. LIMITED
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FEDERAL BALANCED RATIONS

Contain the 21 essential nutrition ingredients — vitamins, proteins, minerals, roughages, etc. — required for sound growth and vitality. Starting,



RATIONS

growing and conditioning feeds for Poultry, Calves, Cows and Hogs. Always insist on Federal.

GENEST, NADEAU,
LIMITED
SHERBROOKE, QUE.

The survival and business performance of cooperative associations are closely associated with the adequacy of cooperative thinking.

—M. A. Abrahamsen,
West Virginia University.

Three Big Elements In Fertilizers

The elements nitrogen, phosphorus, and potassium are of great importance to plant growth. Commercial fertilizers may carry one, combinations of two, or all three of these elements. If three are present, the material is called a complete fertilizer. A quick method of indicating the percentage of each element in complete fertilizers, and also in fertilizers containing only two of the three elements is in common use. For example, a 4-8-10 fertilizer contains 4 per cent of nitrogen; 8 per cent phosphate (expressed as phosphoric acid anhydride), and 10 per cent potash. This order of expressing such analyses is always given as above; that is, nitrogen, phosphate and potash.

In case the fertilizer carries nitrogen and phosphate but no potash, it is usual to refer only to the nitrogen and phosphate content. A fertilizer containing 11 per cent nitrogen and 48 phosphate but no potash is spoken of as an 11-48 fertilizer rather than 11-48-0. Again one containing 2 per cent nitrogen and 19 per cent phosphate but no potash is spoken of as 2-19 instead of 2-19-0.

In single element fertilizers, nitrogen is commonly sold in such compounds as ammonium sulphate, or nitrate of soda, although there are many other nitrogen carriers, including organic materials such as blood meal. Ammonium sulphate contains approximately 21 per cent and nitrate of soda 15 per cent nitrogen. Other nitrogen carriers may have from a few per cent to as high as 40 per cent of nitrogen. Superphosphates contain 16 per cent to 20 per cent phosphate, while triple superphosphates will contain 40 per cent to 45 per cent. The main compounds carrying potash are the sulphates and chlorides (muriates) of potash.

From the results and the preference of the cattle on a farm near Golden City, Mo., it has been demonstrated that the beneficial effect on hay from fertilizer can last at least for eight years.

In 1936, a five-acre plot at the end

of a 100-acre field of prairie grass was treated with fertilizer. At harvest, the hay from the treated area was mixed with hay from 20 acres in making the stock at one end of the field. Three other stacks had hay from the untreated area. For eight consecutive years, the cattle showed a decided preference for the treated hay. Although the water was located at the other end of the field, the cattle went back and forth daily to consume the stack containing the fertilized hay. Last fall, the cattle showed no preference among the various stacks but for eight years they had grazed exclusively in the five-acre field that had been fertilized in 1936.

Late Bloom on Clover is Better

Mr. J. N. Bird of the College Agronomy Department has records for 1939-1944, inclusive, which show that red clover in bloom at dates between July 23 and August 9, depending on the earliness of the season, yields more seeds per head than clover in bloom on any other date. Dr. Morrison, entomologist, has records over the same years, which indicate that more bumble bees visit red clover in bloom over the same period, i.e., July 23 to Aug. 9, than visit clover in bloom earlier. We conclude that aftermath red clover brought into full bloom during late July or early August has a much better chance of being pollinated than first growth clover blooming earlier in the season.

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Strippings

by Gordon W. Geddes

Of necessity the income tax forms must provide many a headache because it must take care of so many forms of income. Still it seems as if there is one simple way which would reduce the number of complaints a little. Why isn't the special form for farmers made to agree with the Farmer's Account Book as sold to us by the Federal Department of Agriculture? This lists the income and expense from the various classes of livestock and other sources in separate sections. The farmer wants it that way so he will know which branches of his work are profitable (comparatively speaking) and which might be curtailed. If the tax form was made in the same way, it would be quite simple to go through the account book and copy off the amounts. But no, one has to go all through the book and re-assemble the expenses to show the total amount spent for feed, veterinary, spray material, seed, fertilizer and so on ad infinitum. How about a little co-operation between the Departments of Revenue and Agriculture to make it easier for those farmers using the Account Book and also to increase the number using it?

The increase in hog prices is a mixture of good and bad news. It is good news for the farmers who must produce pork in the face of constantly rising costs. It is also good news for those who want pork to eat since rising cost of production without a higher price means less pork. It is bad news for everyone because it is one more stage in the programme of inflation which is once more sweeping us into a depression. It is a very minor detail, to be sure, compared to some of the price increases but someone else will use it for a lever to get twice as much increase in the price of his product. All through the war inflation was held up to us as a grave danger and some attempt was made to control it. As soon as the conflict was over some groups began to ask for candy because they had been such good little boys all through the war. Instead of all coming out against it, other groups adopted a policy of

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NATIONAL BARLEY CONTEST COMMITTEE

watchful waiting and then tried for their share. And so we are going to have inflation.

The form in which the increase comes in pork prices is also bad news for the farmers. The government had the chance to place price emphasis on quality where it would encourage production of a hog which would help to hold our export market. Leaving the full premium on Grade A hogs or increasing it and taking it all off on the Grade B, which is not suitable for export, would have accomplished this and still stimulated production as much as other conditions will allow it to be stimulated.

In the attempt to stimulate the growth of our calves without using more feed — rather a tall order — we have been trying out a couple of things we heard about. One of them is the

provision of some form of vitamin supplement during the first three weeks after birth. This is a protection against scours, pneumonia, etc. We have used the form put out by the VioBin Company under the name of Calvita. All we can say yet is that the first two calves on which it was used did very well. The other idea makes use of the cheapest known substance, water. Several dairymen have reported good luck in calf-feeding when warm water was added to the milk. No reason was advanced until recently when the claim was made that the high quantity of minerals in milk required more liquid than was in the milk itself for proper elimination. If this were correct, a little water might be of considerable benefit.

The fact that a few of the Lawfam and Lobo grafts which we put in the

orchard not only lived but grew enough to provide more cion material encouraged Dot and me to try it again this spring with a few more. March weather was certainly warm enough to enable the job to be done early but it will be some time before the results will be ascertainable. But maybe some day it will make a few worms very happy.

For once those who predicted an early and late sugar season were both right for we did get both. In fact, one could still make syrup though the sugar content of the sap is very low. Anyway what looked like a poor season, at one time, turned into a fairly good one before the final boiling. Some say the first crop of the year is a sample of what is to come from the others. If so, there is hope for better supply of food presently.

Behind the Scenes

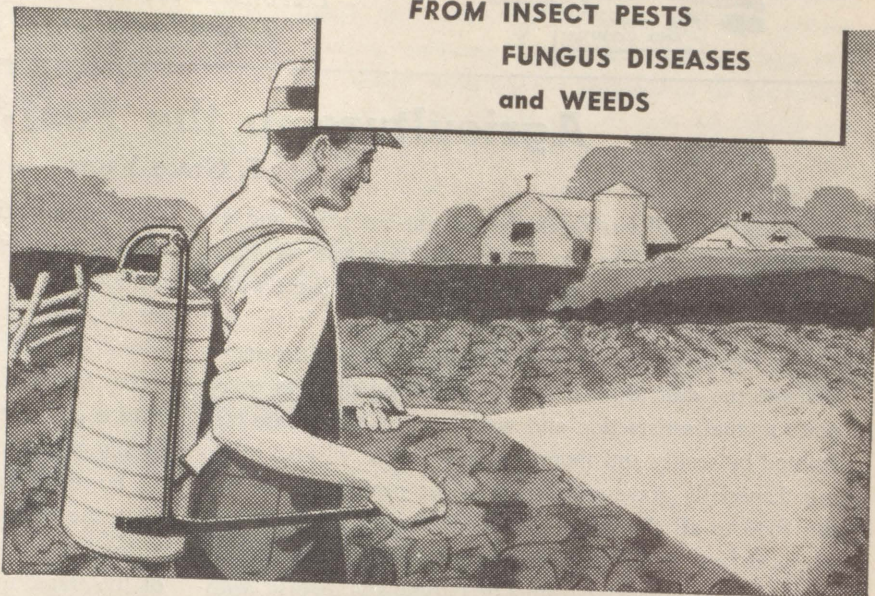
Back in 1934, the College Entomology Department commenced investigations into schemes for rapidly and accurately making preliminary comparisons of the actual killing power of insecticides. Today, years of routine work, involving the handling and counting of hundreds of thousands of individual insects by professors and students working together are paying their first real dividends to the Department and indirectly to the users of insecticides. With the advent of D.D.T. a flood of new potential insecticides have appeared. Only, however, after such materials have been proved to have some effectiveness, will the Canadian Government license their sale. Claims of the promoter, or tests by one man under one set of conditions are not enough to warrant licensing. Many men and many laboratories must test each chemical in many ways before it is sold to the public. Yet witness the rapidity with which D.D.T. appeared on the retailer's shelf after the army no longer needed it. The College laboratory has tested a long series of chemicals this winter. Of these the now familiar D.D.T., the new British Insecticide 666, and possibly others will play a part as agricultural insecticides. Our results help to determine whether or not these products should be marketed, and when they are on the market the Department will be able to discuss their usefulness and limitations in terms of personal, practical experience, as Dr. Morrison has done for D.D.T. in past issues.

Cattle and Calves

The Dominion Provincial Conference recommended that farmers hold beef production in 1946 at the 1945 level. At the same time farmers were advised to reduce cattle numbers, both beef and dairy types, to a level which may be maintained profitably in a peace time economy. The general quality and efficiency of herds may be improved by liquidating stocks of inferior quality.

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THE WOMEN'S INSTITUTES SECTION

*Devoted to the activities of the Quebec Institutes
and to matters of interest to them*

Agriculture in the Post-War Era

by F. Grace Yates

In spite of all our carefully thought-out plans and expectations, most of us are finding the post-war era vastly different from what we had envisioned it. That there would be problems, we knew, but as long as they were in the still distant future, it was easy to minimize them, and to underestimate the difficulties involved in solving them to everyone's mutual satisfaction and well-being. Now we are confronted by reality and there can be no more wishful thinking. Especially grave and urgent is the problem of supplying food to all the hunger-haunted peoples of the world, who are face to face with starvation. No one can read today's vivid newspaper accounts of famine and disease, without asking themselves helplessly just what can be done, by individual effort, to help relieve this burden of suffering which is the natural aftermath of war. And this is where we country women are especially favored, for not only can we do our utmost to conserve valuable food, but we can actually help to produce more!

Increase Production

The Government has asked for still larger production of certain farm commodities. Quebec hopes to double her output of sugar beets; butter is desperately needed and Quebec has been asked for a 5% increase; other fats and oils, meats and livestock continue to be in great demand. Therefore, we must do our utmost to acquire greater knowledge of better farming methods, and then put that knowledge to immediate use. We must study the means by which the fertility of the soil may be increased; we must learn how new and more productive strains of crops and livestock can be bred; we must discover how disease and insect pests can best be controlled and, finally, we must hasten to pass on this information to others.

Then, under our own private rule (usually) there are the poultry flock and the home garden. Eggs and fresh chicken can appear on our tables in dozens of tempting ways and are quite as healthful and appetizing as meat. And think of the glow of satisfaction that is ours when we are able to tear up at least half of the family's meat ration coupons each week, thus making that many more pounds available for shipment to Europe.

Too much emphasis cannot be laid upon the importance of the home vegetable garden. It must be planned carefully in order to provide ample supplies for canning and there must be an abundance of fresh vegetables for

daily consumption, as well. A meal featuring a variety of fresh vegetables, if properly planned and well balanced, cannot fail to satisfy the appetite of the most particular family, so that there is little need of a fancy dessert to round out the menu. In this way sugar, and the now all-important flour may be saved for greater service elsewhere. And it goes without saying that the health standards of the family will rise, besides!

So much for the needs of the immediate future. . . but once the threat of starvation is lifted, what then? Will history repeat itself and will we, once again, make some of the tragic mistakes of the depression era? No, we must determine now, once and for all, that we will avoid them at any cost . . . the economy of scarcity must never be introduced again. Only a healthy world can be a peaceful one; the germs of war find a natural breeding ground in a half-starved, physically depleted people. Continued maximum production of foodstuffs means prosperity, not only for agriculture, but in turn for labor as well, and contentment and well-being for the under-nourished millions of the world. Therefore, both individually and as a society, we must try to impress upon our Government representatives the need for lowering trade barriers, that an equitable distribution of the world's agricultural products may be made possible. We must be genuinely determined that no one shall ever again be forced to go hungry. And we must instill that determination in others . . . we must think it, preach it, insist that it become a reality, not just a far-off Utopian goal. There can and MUST be ample food for all; the safety of Canada and of the world depends upon it.

Improve the Fairs

Without the bounds of our own community there is much to be done now that we have more time at our disposal. County Fairs had hard going during the war years and many were discontinued, but most of these will reorganize this coming season. But many prize lists in the women's section are hopelessly out-dated. We should ask that several Institute members be appointed to the Board of Directors that they may modernize these lists, always keeping in mind the objectives of the women's section of the fair, as follows:

- (a) To raise the standards of individual products.
- (b) To encourage a love for the beautiful.
- (c) To establish new and improved practices.

If there is a young English bride in the district, it will be a nice thought to arrange a plant and bulb shower for her. Invited to an Institute meeting, she can be presented with whatever varieties the gardens afford — iris, peonies, dahlias, etc. A slip enclosed with each gift, giving soil and cultural requirements, is helpful; or several members might volunteer to drop in next day and assist with the planting. Even though she has never gardened before, being English she is sure to love flowers. And who knows, the friendly gesture may help her through one of those desperate attacks of loneliness which are sure to descend, now and then, upon the happiest of new Canadians. . . .

Finally, let us look to our own mental attitudes, the beliefs and ideals which inspire our works. It is so easy to slide back into our comfortable, pre-war rut! Man's inhumanity to man in war is exceeded only by man's indif-

ference to man in time of peace. Now that the sounds of battle have ceased and the first fine flush of victory is fading, we will have to fight against the inclination to draw back, tortoise like, into the shells of our own private worlds, assuring ourselves smugly that, having done our full part in victory, little more is required of us. However, we made many ambitious plans as to how we should use the peace, not for personal gain, but for the welfare and benefit of others. But are we keeping those resolutions or, already, are we beginning to slip back into the old habits of carelessness and indifference? Thinking more of getting than of giving . . . of selfishness than of selflessness . . . of intolerance than the Brotherhood of Man . . . let us answer these questions honestly, and then re-dedicate ourselves anew to the task of making certain that this shall be the "brave new world" that free peoples everywhere fought and died for. . . .

Gaspé County

Just what shall I tell you of this Land's End! On the St. Lawrence shore there are several villages. Ste. Annes des Monts, a village with a lumber business and fishing; Madeleine, Grande Vallee, where one of the merchantmen torpedoed in 1942 was beached and afterwards broken up by storms; Cap des Rosiers, where so many of the dead of ancient ship-wrecks are buried. Here too, the watchers stood on shore in 1942 and watched the action when we lost several boats and a shell or torpedo struck the cliff. Gaspé at the head of the Bay where the cross commemorating the fourth centennial of Jacques Cartier's landing is erected; Fort Ramsay, three miles to the east, built in 1940 but now in the hands of the War Assets Corporation; Douglastown, with its Irish Catholic population engaged in farming, fishing and lumbering; Barachois de Malbaie, a sizeable fishing village; Percé with its mountains and Rock, a mecca for tourists; Cape Cove, where Gaspé peas come from; Chandler the headquarters of the Gaspesia Sulphite Co.; and Newport, another fishing village. These villages follow the coast line for about 200 miles and I doubt if you would find any settlement that is more than 25 miles at most from the sea coast.

The interior is a great expanse of rivers, lakes and forests with some very good motor roads running in for miles. There is a vast deposit of copper, known as the Miller mines, which has never been developed. There are also traces of lead, zinc and coal, but apparently not in sufficient quantity to attract the necessary capital. Oil has also been found but the vastness of the territory and the cost of drilling have prevented extensive exploration.

The Bay of Gaspé, with its inner Basin, is one of the finest natural harbours on the Atlantic coast of America, and is by several hours the nearest port to the British Isles.



Semi-Annual Meeting Gaspé Co. W.I. at York Parish Hall.

(nearer than either Halifax or St. John). The Bay is wide and long and sheltered. In the first World War the whole first contingent waited in the outer bay for convoy and the inner bay in this past war was submarine netted and guarded by the guns of three forts. At Sandy Beach on the inner bay Fort Ramsay was built, occupied by Army, Navy and Air Force, and from here many planes, Fairmiles and corvettes went out on Gulf Patrol. It was from this wharf that a tanker left at 3 p.m. one day and the survivors from this same tanker were landed back at seven that same evening. It was from here that the converted yacht "Raccoon" left to be reported within a week as a total loss with no survivors. And from Gaspé station a few days later 17 widows, some with children, returned to their former homes. In this same action the "Charlottetown" was also lost and several merchantmen. I believe the official figure for that fall was 21 ships.

A Month With the Institutes

Glancing over these notes one cannot help but notice how many times we see these words, "new members enrolled," a most encouraging item.

Argenteuil. Brownsburg reports eight new members joining at their last meeting. Frontier had an increase in membership of four. Jerusalem-Bethany heard excellent reports from the conveners. Lakefield has been remembering their sick and shut-ins. Lachute has benefited by two McGill Travelling Libraries this past year. 41 books were added to the local library. Morin Heights held a military whist which netted \$13.94 for the treasury. One new member was welcomed and a true or false quiz proved enjoyable. Pioneer had a sandwich contest with prizes. Upper Lachute and East End had the pleasure of entertaining the county president, Mrs. Smillie.

Brome. South Bolton presented a gift to their former president in appreciation of her services. Four members enrolled in the Blue Cross. Plans are being made for a sale. Abercorn prepared the year's programme and discussed various projects. Three new members were added to the roll.

Bonaventure. New Richmond received a donation of 25 lbs. of yarn from the Navy League at Quebec. A letter was read from a W.I. in Chilliworth, Surrey, giving thanks for a donation of Christmas cake and tea bags.

Chateaugay-Huntingdon. Aubrey-Riverfield had as guest speaker Mrs. D. F. Orr, county president, who gave an instructive address on the work of the Q.W.I. A talk on "Food and Agriculture" also proved of interest. Boxes of food are being sent to Scotland, also clothing to Europe. \$30 was netted from two euchre parties. Dundee had a demonstration on the use of a pressure cooker. Short items were read by the conveners and a discussion, "Women's Part in Canada's Progress" was of interest. Franklin Centre is another branch reporting a visit from Mrs. Orr who gave a resumé of the Q.W.I. Board meeting. The county secretary was present also and spoke briefly. A practical talk by Mr. Bob Reid on landscape gardening concluded a profitable afternoon. Hemmingford had a demonstration on pressure cookers. "Scottish Poets" was the subject of the programme. Howick heard a review of the book "The Unreasoning Heart" and an informative talk on Banking was given by the guest speaker, Mr. Corkrane. A social evening is planned. Ormstown heard a timely talk by Dr. Stalker on "Positive Health". A paper, "Sugar from a Woodpile", was given by the convener of Welfare and Health.

Compton. Brookbury presented wrist watches to returned boys from Hongkong. A subscription to the Sherbrooke Record and other gifts were sent to servicemen in the hospital. A woollen blanket was also given a recent bride. The programme consisted of a quiz. Cookshire held

a "publicity" meeting. A paper on the A.C.W.W. was read. Canterbury enrolled six new members. The Blue Cross Hospital Plan has been adopted by this branch. \$10 was voted for "Save the Children Fund" and a motto pin presented a member leaving the community. Two members visit the school each month in turn. East Clifton planned their meeting around Home Economics. Papers were read on "What's Cooking?" "Tips on how to save Shortening," "Saving Sugar in Desserts" and "Menu for a Healthy Diet." How to plan nourishing meals on our present rations was discussed and a quiz on de-control completed the programme. For relaxation a contest on "Old Songs" was enjoyed. Two new members were welcomed and three more enrolled in the Blue Cross. Sawyerville heard an enlightening talk by Mr. Cromwell on "Women's Financial Rights in Quebec." Marriage contracts and wills were also discussed. Donations were given the local library and soldier's "Welcome Home" fund. A tea and presentation for a war bride was sponsored. Card parties and rummage sales have been a financial success.

Gaspe. A very complete report of the year's work comes from this country. An interesting note is the increase in membership, the 5 branches now having a total of approximately 108 members. And here is another commendable item; the county convener writes, "all publicity conveners have sent in their reports." An example for the rest of us. Haldimand had an afternoon tea in connection with their last meeting, \$5 being realized. A special fund has been started to aid shut-ins.

Gatineau. Eardley reports two timely subjects discussed at the meeting, "Maple Sugar Industry" and "Manufacture of Rayon." A contest was held on articles made from flour sacks. These were sold and \$5.35 added to the



Gaspe Branch presidents: left to right—Mrs. L. Coffin, Mrs. A. Donovan, Mrs. G. Patterson, Mrs. V. Patterson, Co-pres., Mrs. G. Miller, Mrs. W. Minville, pres. Gaspe-Bonaventure Cercle des Fermières, Mrs. C. Dow, pres. F.W.I.C., Mde. Chas. Gosselin, Pres. Lake St. John Fed. of C.D.F., Mr. Z. Belanger, Agronome, Miss E. Walker in rear.

treasury. Kazubazua is starting plans for a school fair. A donation was given "Save the Children Fund". Rupert reports a most worthwhile undertaking, trees and shrubs were planted in the local cemetery. \$16.25 was netted at a card party and cheer sent to shut-ins. Wakefield studied the report of the Q.W.I. Board meeting. A splendid talk on Quebec, now and 30 years ago, was enjoyed.

Missisquoi. Cowansville is most interested in a Youth Centre being formed in that community. Plans for assisting in this worthy project were discussed. This branch is sponsoring a school fair, the first to be held in that district. A quiz on fruit and vegetables proved enjoyable. St. Armand is making plans for the next clothing drive.

Megantic. Inverness welcomed a Scotch bride to their community. Another member was added to the roll.

Pontiac. Beech Grove made a quilt at their last meeting. Bristol Busy Bees held a shower for their first war bride and plans were made for a welcome for several returned men. A generous donation of patches was received from a friend and an autograph quilt is being made for the Community Hospital. The subject of the programme, "Why should I belong to the Q.W.I.?" brought out some good ideas. Clarendon presented a gift to a member who had attended all the meetings during the year. An electric lamp was also given the secretary who is leaving the community. Two quilts have been made. Fort Coulonge reports a successful year. Elmside is continuing their work of furnishing a room in the Community Hospital. Stark's Corners has sent a complete layette overseas and more are being made for the Red Cross. Readings and contests formed the programme. A box of fruit was sent to a member in the hospital. A social evening was held for a returned man and his bride and many beautiful gifts were given them. Wyman had a programme of Irish and other readings and for a lighter touch a humorous sketch relating to W.I. work.

Quebec. Valcartier discussed the Blue Cross Hospital Plan. A special committee was appointed to remember the shut-ins.

Richmond. Cleveland reports 5 new members. \$25 was voted the Red Cross and \$27.65 "talent money" was handed in. Dennison's Mills has enrolled in the Blue Cross. Melbourne Ridge has another member in the Blue Cross. 7 quilts have been made and sold and cheer was sent to a member in the hospital. Richmond Hill is making two quilts. A new baby was remembered with War Savings Stamps. Spooner Pond had a card party and raffled a quilt and pillow slips. A coin shower was given a baby and fruit sent to shut-ins.

Rouville. Abbotsford. Miss Walker was a guest at the meeting and gave a forceful talk on "Save an hour and a Mile" Planning and making a garden was discussed and sugar saving recipes were given in response to rollcall.

Shefford. Granby Hill had donations of goods from clothing firms. These were sold and proceeds added to general funds. The monthly raffle was the usual success. South Roxton welcomed a new member. Plans were made to entertain the county meeting. Warden is making 3 quilts for the coming clothing drive in June. The guest speaker, Miss Wallace of King's Hall School, discussed green vegetables and their vitamin content. The following note added a personal touch to this report, "a buttonhole contest was held which showed how much we need to practise."

Sherbrooke. Ascot donated \$5 from the treasury to the Cancer Research Fund and individual members are to be canvassed. The local agricultural representative was present and lead in a discussion on making out income tax reports. A successful card party has been held. Brompton Road welcomed a British war bride and made plans for a banquet for their returned men. "Sunflowers in the Limelight", was the subject of a paper and bulbs and slips were exchanged. Cherry River added 4 new members to the roll at a busy meeting. Lennoxville is packing a box of clothing for the Polish Relief. "What we eat for Dinner" was the subject of the programme. Orford heard a talk on weaving and samples of the work were shown. Sick and shut-in members were remembered.

Stanstead. Ayer's Cliff. The convener of Home Economics had charge of the programme. Various cuts of beef and lamb were displayed and new methods of cooking meat were discussed. A very satisfactory report of the hot lunches given at the school was heard. The convener of Education read an article urging greater interest in community work and Adult Education. Beebe is planning a welcome for a war bride. Easter greetings were sent the shut-ins of the community. Dixville discussed the County Health Unit. Minton reports 6 new members. Here is a branch with every member enrolled in the Blue Cross. An instructive paper on the apple borer was read by the convener of Agriculture. Stanstead North welcomed home a returned man and his bride. A quilt was presented to another war bride. A quiz contest on the Flag was conducted. Tomifobia had as response to rollcall "Thrifty Ideas". Many helpful suggestions were made. Way's Mills sent two parcels to W.I. friends in the Old Country. A quilt was displayed made by the members. This is to be presented to a war bride.

A Food Plan

Some may think a world food plan is impracticable — a dream of starry-eyed idealists. I suggest that a plan which will open up great new markets for agricultural and industrial products and bring about a great expansion of trade is common sense and economic wisdom. If a plan which does this, and at the same time banishes hunger and malnutrition from the world and gets the nations to cooperate with each other instead of fighting each other — if this idealism, then I say the world will be the better for a good stiff dose of idealism.

—Sir John Boyd Orr.

The Problem of Palestine

by Florence P. Mortimer

The question should the Jew be allowed to enter Palestine in unlimited numbers is now being dealt with by a Commission of British and Americans, but we might review some of the facts as known.

Before the first great war Palestine was part of the Turkish Empire, its population about 650,000, of whom about 85 or 90,000 were Jews. In 1917 the British Government made it known that they favoured in Palestine a National Home for the Jewish people, it being clearly understood that nothing would be done that would interfere or prejudice the civil and religious rights of existing non-Jewish communities in Palestine. It should be clearly understood here that the Jews were promised help in founding a National Home, not a National State, which is a very different thing. In 1929 Britain became the mandatory power, when under the terms of the mandate she promised to develop self-government and to safe-guard the civil rights of all inhabitants of Palestine.

The British White Paper

From 1920 to 1939 remarkable economic progress was made by both Jews and Arabs, Arab orange groves being nearly as extensive as Jewish, and in 1939 a white paper was issued by the British Government, with the proposal that an Independent Palestine should be created within ten years. To prepare for this a body, representative of the people, was to be set up at the end of five years. At the same time the white paper asserted that the Arabs had to be assured that unlimited Jewish immigration and land purchase, would not put the Arabs in the position of a minority, accordingly it laid down:— (a) that in the ensuing 5 years a maximum of 75,000 Jews would be admitted to Palestine following which there would be no further Jewish immigration without Arab consent. (b) That Jewish purchase of land would be prohibited in certain districts and restricted in others. Owing to the extreme difficulty encountered by the Jews in escaping from Nazi-controlled Europe, only 43,922 of this quota entered Palestine, legally or illegally, by Sept. 30, 1943. In Sept. 1944, the Jewish agency asked for 10,300 places to be made available. This was granted but a necessary limit was placed of 1,500 immigrants a month. This was done for practical reasons — the housing situation and the possibility of serious difficulties in the economic sphere.

The Arab Side of the Question

Perhaps here it would be as well to look into the Arab side of the question, and to admit there are many educated and enlightened Moslems and Arabs, many of them graduates of Oxford or Cambridge. They are working for

higher education for their women. Also the Arabs have been in possession of that country for the last 13 centuries. Jerusalem, the heart of Jewry, is sacred to the Jew as the resting place of the Ark of the Covenant, not through any connection with Christ. To the Moslem and Christian, however, it is revered for that reason. The site of Solomon's Temple is now in the hands of the Moslems. It contains the Mosque of Omar, which is built on the traditional site of the temple. At the southwest corner is a small mosque called the Mosque of the Jesus. The Moslem believes this was the site of Mahomet's ascension in practically the same manner as our Lord's from the Mount of Olives. He also believes that this place will be the scene of the Judgment Day. The fact has to be faced that it has been impossible to find common ground between Arab and Jew. The difference in religion, in language, in cultural and social life is great.

Thousands of Jews have wailed and prayed at the wailing wall, which is part of the outer face of the massive wall erected around the Temple area and it is a well known fact they pray for the restoration of the Temple to Zionism. The Arab is aware of this and this is one more reason for his antagonism. It is well to remember that the cause of the Arab in Palestine has been espoused by the whole Arab world, and more lately has become of keen interest to their 90,000,000 co-religionists in India.

In Nov. 1945 the British foreign secretary said that serious attention was being given to the Palestine question. A joint Anglo-American Committee of inquiry has been set up under a rotating chairmanship, to examine the position of Jews in Europe, also to hear views of competent witnesses and to consult representative Arabs and Jews.

Anglo-American Inquiry

As far as Palestine is concerned it is clear that while the mandate continues the British Government cannot divest themselves of their duties. They, therefore, propose to deal with the question in three stages. (1) They will consult with Arabs to arrange that there be no interruption of the present rate of Jewish immigration. (2) After considering the interim report of the committee they will explore with the parties concerned the possibility of some temporary arrangement for dealing with the problem until a permanent one can be reached. (3) They will prepare a permanent solution for submission to the United Nations and if possible an agreed one. Mr. Bevin states that in Palestine they have inherited a most difficult legacy, any violent departure without adequate consultation would cause serious reactions throughout the Middle East and would arouse wide-spread anxiety in India.

Better Health for Canada

by Lillian Collier Gray

The "Review of Canada's Health Needs and Health Insurance Proposals", compiled and published by the Health Study Bureau, 30 Bloor St. W., Toronto, leaves no doubt as to the need of more adequate health insurance in Canada. This bulletin might well be studied by women's groups and organizations everywhere.

It is startling to find that among eight leading nations of the world, Canada is the one having the highest infant death rate, that of 55 per 1,000 live births. The *rural* rates are largely responsible for this, due to the fact that we haven't been able to solve the problems of distribution of services and financing. When we consider that during the war years when 41,000 Canadian men lost their lives in the armed services, some 130,000 babies under one year died in Canada, it seems to be time for farm women to do something about this terrible waste. During this same period of time, 36,000 Canadians died of T.B.

The "Review" quotes many figures that go to show just how serious the health situation is. Among these is given the average distance between rural General Hospitals. In Quebec, this is much farther than in any of the other provinces, being 103 miles. Ontario has the shortest mileage — 26 miles. The Canadian Federation of Agriculture has urged the setting up of health centres in the most strategic positions, with facilities for maternity and minor operations, to serve the surrounding areas. These would all be integrated with hospitals in the towns and cities. The "Review" points out that proper hospital and diagnostic facilities should be provided in rural areas. The hospital of the future should not be a last resort; it must be a centre for health and education to serve the surrounding country.

Quebec has better health services than most of the provinces. At the time of the Survey, 51 health units were serving 62 counties, representing more than 80 percent of the rural population. But, it is pointed out, the area is sometimes too large for the personnel to cover fully, and some of the services needed by the people do not come under the public health scope, and the patient is therefore often unable to afford treatment. Moreover, the health units do not attend confinements, and mothers living in isolated sections where there are no doctors are unable to obtain any kind of help. This is the case in a great many parts of Canada.

A vast amount of money is being poured out for sickness. A great deal of this sickness would never have been if there had been preventive medicine. The medical profession is making its livelihood out of this lack of preventive medicine. The public is demanding that we have a system of health insurance whereby ALL people shall have

the education and services to help them *keep* well, and whereby the standard of health of all Canadians will be raised.

Of course, the cost of a health insurance scheme must be paid by the people of Canada. And there is a wide difference in the taxable capacity of the provinces; and for that reason the cost should be assumed by the Dominion. The richer provinces need these services less, the poorer need them more. This unevenness of income is due to the centering of wealth in the larger cities. The provinces of Alberta, New Brunswick, and Saskatchewan have no such great centres. The great port cities and financial centres place Ontario, British Columbia, and Quebec at the top.

But, it is by the productive efforts of the less fortunate provinces that the great ports and rich centres are prospering, and for that reason there is no democratic justice in allowing the poorer provinces to be reduced to slums. Unless we wish to build up in Canada a number of small, warring states such as has disturbed the general peace of Europe for generations! Although it will cost more to institute health insurance in one province than in another, is it not only right that the cost should be paid by the provinces on a per capita basis? The Federation of Agriculture advocates national planning and national financing. The services that are the right of every Canadian citizen must not depend on the economic area in which he lives.

We are already paying very heavily for inadequate health services. Is it not time that our money should be spent on adequate services? Is it not time that we pay for positive health instead of waiting for sickness to strike? Health services properly financed and distributed would contribute much to national unity. Mismanaged, it will contribute to disunity among the provinces. Farm women, let us work for health, and unity!

Ring Rot of Potatoes

Nova Scotia is said to be the only province in Canada free of a serious potato disease known as "Ring Rot". A recent meeting of potato growers held in Kentville, named a committee to look into the situation with a view to take every possible means to keep the disease out of the province. Countries free of this bacterial ring rot are in a favored position to sell seed potatoes to other countries. Hence, every potato grower, large and small, is urged to use certified seed and avoid the risk of planting diseased tubers.

Telephone operator (to new girl just being broken in): "No, honey, you say, 'Just a minute please,' not, 'Hold onto your pants, mister'."

4H Club Handicraft Contest

Mr. J. A. Breton, Manager of the Quebec Forestry Assn. and General Secretary of the 4H Club Association of the Province of Quebec, is offering to all the rural girls of the Province the advantage to participate in the 4H Club Handicraft Contest.

Mr. Breton's invitation reads:

"The 4H Club are offering to the girls of the Province of Quebec, the opportunity to take part in the 1946 Embroidery and Handicraft Contests which are being respectively sponsored by the Canadian Spool Cotton Company and the T. E. Eaton Company Limited.

We are inviting every girl of the Province, between the ages of 10 and 20 to enter the contest, whether or not she belongs to the Club. A \$300. bursary will be granted to the winner of the handicraft section, while prizes to the amount of \$500. will be awarded to the winners of the Embroidery and Crochet Contests.

As these rewards will be remitted at the fourth 4H Provincial Contest, which will be held in Montreal from August 11th to the 14th, an invitation will be sent to twenty non-members of the Club to attend the convention. Every guest will be entitled to the same privileges and conditions as the members."

May I express the wish that, through the Women's Institutes hearty support a large number of girls will enter the contest and take advantage of this generous offer and great opportunity being given to them by the 4H Club of Quebec.

Paquerette C. LeBeau, Secretary,

Home Economics and Handicrafts Div.

Section 1. — EMBROIDERY

1. Pin Cushion. Cross-stitch embroidery. Material: cotton or linen.

2. Cushion. Cross-stitch embroidery. Material: domestic or commercial linen. Minimum dimension: 12 x 18 inches.

Section 2. — CROCHET

1. Handkerchief; crocheted white lace.
2. 1 set collar and cuffs with white crocheted lace. Lace not less than 1/2 inch wide.

Section 3. — SEWING

1. Apron. Pattern optional.
2. Apron. With appliques.

Section 4. — NEEDLE-KNITTING

1. Scarf for young girl.
2. 1 pair mittens with embroidery.

NOTE. — The Canadian Spool Cotton Company has put on the market a number of knitting, crochet and sewing books where you will find many suggestions and patterns that will be useful to you.

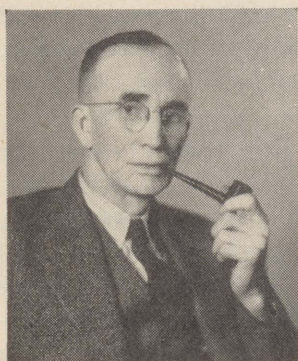
The first article in each section is to be executed by girls of 10 to 14 years.

The second article in each section is to be executed by girls of 15 to 20 years.

Sections 1 and 2 are being sponsored by the Canadian Spool Cotton Company for which prizes to the amount of \$500.00 will be awarded.

Sections 3 and 4 are being sponsored by T. E. Eaton Company for which a bursary of \$300. will be granted.

New Brunswick Helps Agricultural Students



J. K. King, Deputy Minister of Agriculture for New Brunswick

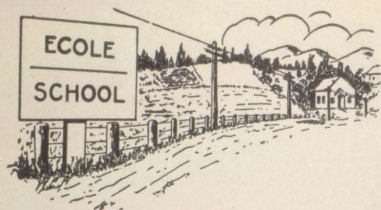
REALIZING that New Brunswick does not maintain a University offering Agricultural Degree courses, and for the purpose of assisting New Brunswick Agricultural Degree students pursuing such studies, the New Brunswick Department of Agriculture inaugurated a policy some years ago offering transportation to students attending recognized agricultural colleges which included transportation to college in

the fall and return in the spring. In order to further assist selected New Brunswick young men and women, a Students' Loan Assistance Policy was recently developed offering interest-free loans to qualified students.

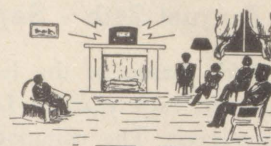
This policy is designed for the purpose of assisting

selected New Brunswick young men and women of potential merit in the third and fourth year agriculture and home economics degree courses at approved universities. The New Brunswick Department of Agriculture offers interest-free loans under the following conditions:

- (1) The annual loan shall not exceed \$300.00.
- (2) Students must have successfully completed the first two years of training at an approved university.
- (3) The loan without interest shall apply to third and fourth year degree students in agriculture and home economics at approved universities.
- (4) Recipients of such loans shall be available for service in New Brunswick in the vocation for which they shall have been trained for a minimum period of three years.
- (5) The repayment of such loans shall commence on or before the termination of the recipient's first year of employment and shall be repaid in full within a period of six years from the completion of training.



LIVING AND LEARNING



Accomplishments of the Federation

by Joseph Galway

What is the Canadian Federation of Agriculture doing for farmers? It is sometimes difficult for the layman to point to specific accomplishments of Federation activity. In many cases Government policy is influenced by Federation recommendations and it is almost impossible to single out and evaluate such action.

Recently the National office released a bulletin outlining some of the latest developments in the field of organized agriculture. This bulletin covers in detail many phases of their work; we will only touch the main points in this article.

The first one is the matter of direct sales of Army trucks to farmers. This policy was started during 1945 and cancelled in the fall. The Federation and its member bodies went to work on this problem and the result is, that a plan has been worked out which means a continuance of direct sales on an even more satisfactory basis than last year. It is expected that in the very near future War Assets Corporation will announce the number of trucks to be released to farmers in the Province of Quebec.

It has become a custom of the Federation to make an annual presentation to the Dominion Cabinet. This year they met almost a full cabinet, there being 14 members present exactly the number of the Federation delegation. It was the largest cabinet representation ever to greet the Federation and it can be accepted as an indication of the growing importance of the Federation in the eyes of the Federal Government. The brief presented by the President, Mr. H. H. Hannan was warmly received, and highly commended by Prime Minister King, who stressed the broad international outlook of the Federation as indicated in the closing remarks of the brief.

Mr. W. J. Parker of Winnipeg spoke clarifying the Federation's policy on the matter of price relationships. He said, "If the price line of other goods and services was allowed to bend far upward, then there would have to be a revision of prices for farm commodities upward to meet that trend." He went on to say that the wheat farmers were concerned more with stability of price and markets and he emphasized the fact that if ceilings were taken off wheat now the wheat producers would grab for every

cent in sight, they would have no ground on which to base an argument later for a floor to prevent disastrous drops in wheat prices.

Mr. Parker emphasized also the importance of keeping our eyes on the ideal of an international wheat agreement, in accordance with the principles and policies laid down by F.A.O. respecting international commodity agreements.

Mr. R. J. Scott of Ontario and Mr. J. A. Marion of Montreal dealt with the farm labour situation emphasizing the seriousness of it, particularly in those branches of agriculture where year around labour was required.

Mr. Gardiner was the only minister of the cabinet to reply extensively to the brief. He dealt with most phases of it; warmly welcoming some of the recommendations and opinions expressed; about others he was not so enthusiastic.

The National office reports that altogether the interview was very satisfactory. Farm people can be proud of their organization. These accomplishments are only a few of the more recent ones. As we look forward to the coming world agricultural conference to be held in London, England, we have every reason to expect great things from the Canadian Federation of Agriculture in the future.

Farm Forum Council Speaker



Hon. A. C. Taylor, Minister of Agriculture of New Brunswick will be the special guest speaker at the Annual Meeting of the Quebec Council of Farm Forums at Macdonald College, on Saturday, June 22nd.

The usual full program of reports, election of officers, resolutions, and tours of the College have been arranged by the Executive of the Council in cooperation with the Field Days Committee of Macdonald College.

Camp Macdonald Date

August 24th - September 2nd.

The fifth season of the leadership training course which is held each year on Lake Memphremagog has been announced. The commodious facilities of Memphremagog Camp for Girls near Perkin's Landing have been leased from Miss D. L. Gass. Courses will be offered covering the most important phases of community work: discussion, recreation, use of films and radio, publicity, singing and poster making. Generous scholarships covering board and transportation will be available through an arrangement with the Dominion-Provincial Youth Training Plan for those between 16 and 35 years of age. The course will be operated jointly by Macdonald College and Laval University under the auspices of the Quebec Association for Adult Education.



Farm Forum Figures Tell a Story

The following chart shows that this year 98 Forums were registered and each one reported for at least part of the season. Argenteuil and Chateauguy counties have the largest number, with a total of 15 each. The total number of meetings held by all Forums in the Province was 1245. Chateauguy was high county with a total of 209 meetings.

Twenty-one thousand and forty-nine people met in Forum discussion groups during the season. Huntingdon led all others with the impressive figure of 3124.

The averages show many of the smaller counties in a much better light. For the whole province the figure for the average number of meetings held was 13.83. Gatineau with only six Forums registered had an average of 17.

Attendance at meetings showed some surprising trends. Rouville, with only two Forums registered had an average attendance of 23.80 while the figure for the province was 15.92.

This is the first year Farm Forums have operated in Megantic County. They were unable to get started until well on in the season and as a result their totals were low, but the averages are high.

The following figures indicate how regularly some Forums met. Four groups: Barnston in Stanstead Co., North Clarendon in Pontiac Co., Wright in Gatineau Co., Eaton Road in Sherbrooke Co., met every Monday night during the season making a splendid total of twenty meetings each. Eleven met 19 times, five Forums had 18 meetings and 14 had seventeen meetings. Twelve Forums had

16 meetings and 8 had 15 meetings. Thirty-seven Forums held fewer meetings than 15 ranging all the way down to one.

Richmond County was the most efficient having a total of three Forums registered and two of them held 19 meetings each.

COUNTIES	No. of Forums Registered	MEETINGS		ATTENDANCE	
		Total	Average per group	Total	Average
Argenteuil	15	178	11.8	2,537	14.24
Brome	8	112	14.00	1,980	17.68
Chateauguy	15	209	13.9	3,091	14.78
Compton	5	69	13.8	1,120	16.23
Gatineau	6	102	17.00	1,311	11.86
Huntingdon	12	168	14.00	3,124	18.59
Megantic	3	23	7.66	547	23.80
Missisquoi	6	95	15.8	1,798	18.92
Pontiac	11	136	12.36	2,182	16.05
Richmond	3	40	13.3	432	10.8
Rouville	2	32	16.00	682	21.31
Shefford	3	37	12.3	483	13.05
Sherbrooke	4	61	15.2	842	13.8
Stanstead	5	83	16.6	920	11.8
Totals and Averages	98	1,245	13.83	21,049	15.92

Adult Education Conference

At Queen's University, Kingston, May 20-25th, an important conference called by the Canadian Association for Adult Education was held to which all national and provincial organizations concerned with the theme "Building Community Programs" were invited. Commissions were:—The Job of Adult Education in Our Time — Leadership Training — Community Centres — planning and Resources — The Organization of Adult Education in Canada.

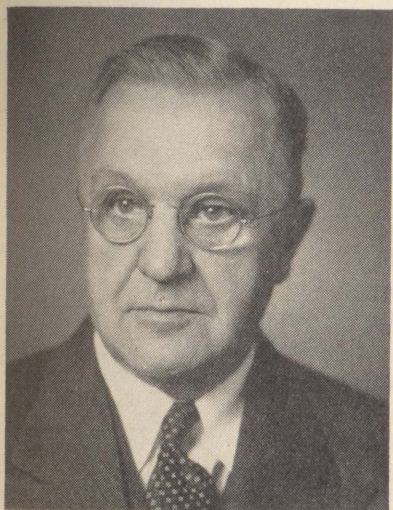


THE COLLEGE PAGE

The Macdonald Clan

*Notes and news of staff members and
former students*

T. Fred Ward Retires



The best wishes of all Macdonald people go out to Mr. Ward, who has faithfully served the College throughout the forty years of its existence, and who retires on May, 31st.

Thirty years ago Principal Harrison came upon a youngster in the act of helping himself to apples from a tree in his private garden.

"What are you do-

ing in my apple tree?" asked Dr. Harrison. "I'll have to tell your father about this."

"Oh," replied the youngster, "my father owns Macdonald College — he's Mr. Ward."

So close has been Mr. Ward's association with the College from its very birth, and so great his influence in the control of its business affairs, that the thought is one that might naturally occur to a child, though it might reasonably be turned around into "Macdonald College owns my daddy."

Born in Worcestershire, England, in 1879, "T. Fred" came to Canada with his parents and was educated in Montreal. After five years in the employ of the Canadian Pacific Railway he resigned to join the staff of "The Exporter" as a reporter. Business experience was gained in a commission merchant's office and in a wholesale grocery business, where he first came into contact with Sir William Macdonald, the tobacco manufacturer and the founder of Macdonald College.

In 1901 he entered the office of McGill University as cashier and assistant accountant. Here it fell to his lot to organize the offices of the Conservatorium of Music and

the McGill Union, which were projects sponsored respectively by Lord Strathcona and Sir William Macdonald. He was present when the first sod was turned for the Macdonald College buildings in 1905, and visited the site frequently while they were being built.

In 1907, at Sir William's suggestion, he was appointed Bursar of Macdonald College and took up residence in Ste. Annes. It would be almost impossible to catalogue and comment upon all the responsibilities he has carried during his years of service to the College, but among other things he has had charge of the general administration of all the non-academic activities of the College; collection of student fees and all other income, management of residences and dining halls, maintenance of buildings and grounds, management of College investment properties. He has looked after the General Stores and the Bookshop, was Postmaster and manager of the postoffice. He has been secretary of the Consultative School Boards for the district and as such acted as liaison officer between the four School Boards and the College. This is only a brief summary of his activities; whenever anything needed doing, whenever anything "went wrong", when anyone got into difficulties, be he student or staff member, Mr. Ward was the man to see to get things straightened out.

He married Miss Jean Elcome in June, 1905. Their four children are all graduates of the Macdonald High School and one of them, Margaret, now Mrs. Paul Boisen of Chicago, is a graduate of the School of Household Science. Wallace is with the Canadian Press Association, Fred junior is with the Johns Manville Company at Asbestos, P.Q., and Kay is living at home. Mr. Ward's mother, "Grandma Ward", is held in affectionate regard in the College Community.

Although retiring from his duties with the College, Mr. Ward and his family will remain in the community, and he will retain a link with College activities, for he has been appointed by the students as the permanent secretary-treasurer of the Students' Council, a position in which his wide experience will enable him to render invaluable help to all the student organizations and activities.

A Liberal Education

by Norman St. Jean

A student surveys his life at Macdonald.

Being a Canadian of French origin who attends a liberal institution, I would like to share the feelings I will take away with me as I leave Macdonald College.

In Springtime the Mac campus is a subject of inspiration to the most critical of artists; his brush will imitate nature in marrying happily the lively red color of the buildings to the deep colored evergreens.

This institution is not exclusively concerned with agriculture. Baccalaureates in Household Science and Teaching Certificates for the Protestant elementary schools of the Province of Quebec are awarded to deserving students each year. The three schools of Macdonald impart their knowledge to some 500 hundred students, who have come from many Canadian provinces and in a number of cases from remote parts of the world such as the West Indies, India and others.

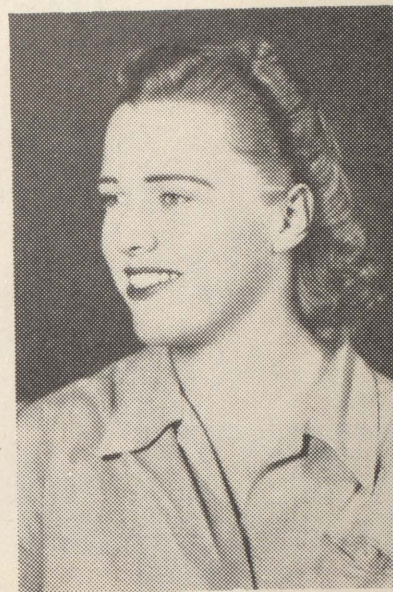
The atmosphere of peace and tranquility of the Macdonald campus in no way reflects the disturbances and the anguish of our troubled world. Races, which are the object of prejudice and often persecution elsewhere, enjoy here the privileges of freedom and respect.

To a Canadian of French origin, whose primary tendency is towards provincialism, an almost defensive attitude is assumed as he is called on to mix with this cosmopolitan group. His thoughts, however, are soon emancipated from sectional boundaries as he happily recognizes the fact that English, French, Jews and others can live together at a level of equality that only true brothers can enjoy and appreciate. Religious differences are overlooked and the faith of the individual is left to his own choice and discretion.

This Canadian realizes in time that his whole education is not composed of book-learning only, but also embraces the ability to think for himself, social responsibilities and participation in sports. The individual undergoes a transformation of attitude, which leaves him in a pleasant state of mind, and having acquired a new philosophy towards life he will become an ambassador of good-will towards all.

The annual convention called under the auspices of the High School Principals' Association, met at Grand'Mere on May 10th and 11th. Cooperating organizations at the Conference were the Quebec Council of Community Schools and the Provincial association of Protestant School Boards. Speakers were Dr. A. S. MacMillan of McGill University and E. R. McEwen, Secretary of the newly formed Recreation Division, Canadian Welfare Council.

Leader for Camp Macdonald



Dr. Lois Fahs Timmins is well known to those active in Community Schools, Farm Forums and Camp Macdonald. Dr. Timmins has been engaged for three months — June 15th to September 15th to act as Administrative Assistant, and Recreation Instructor of the School of Community Programs.

Prof. H. R. C. Avison attended a Joint National Conference on Adult Education at Detroit, April 23rd to 26th. Five important national groups cooperated in calling this conference. Some of the topics discussed were: New Developments in Discussion Techniques, Community Use of Films, Evening Colleges, and Extension Centres, Leadership Training, and Library Extension Service.



These are the Macdonald College graduates in the B.Sc.(Agr.) and B.Sc.(H.Ec.) courses of 1946.

Henry Henpeck—"I want three potted geranium plants."

Florist—"Sorry we're out of geraniums, but we have some nice potted chrysanthemums."

Henry—"No, they won't do. You see I promised my wife I'd water her geraniums while she was away."

"My wife," said Mr. Henpecked, "kisses me every time I come into the house."

"Ah," said his friend, "that's affection."

"No," sighed Henpecked, "that's investigation."

Control of Garden Insect Pests

Know when and where to expect insect damage. (Keep this guide). Anticipate the damage or detect it early. Then act promptly.

Key to Abbreviations Used Below: P.G. = Paris Green. Ar.L. = arsenate of lead. L. = hydrated lime. Rot. 5 = Derris (5% Rotenone). Rot. 1 = 1% rotenone dust. 50 W.D.D.T. = 50% D.D.T. wettable powder. Soap = laundry soap. Cor. sub. = corrosive sublimate. Bx.M. = Bordeaux moisture. Nic.sul. = 40% nicotine sulphate (Black Leaf 40). Numbers correspond to illustrations on the left.

Insects That Eat or Destroy Leaves

Green Cabbage Worm (1) from eggs of white butterfly. Damage to cabbage, etc., from early summer on. Early season dust: 1 part Ar.L. + 5 parts L., or 3% D.D.T. dust. Later use Rot.

Flea Beetles (2) small, shiny, hard-backed, jump-like fleas. Eat holes in leaves of potato, turnip, egg-plant, etc., in spring and summer. Sprays: Bx.M., or 1 part Ar.L. + 15 parts L., or 1% 50 W.D.D.T. or 3% D.D.T. dust.

Striped Cucumber Beetle (3) yellow and black striped . . . on and under leaves of all cucurbits. Spread wilt. Dusts: 1 part Ar.L. + 20 parts L. or 3% D.D.T. (may injure leaves).

Potato Beetle . . . black and orange striped hard-backed adults and soft, spotted, grubs on potato and eggplant all summer. Spray: 2 lbs. Ar.L. (or $\frac{3}{4}$ lb. P.G.) in 40 gals. Bx.M., or 4 ozs. 50 W.D.D.T. in 25 gals. water.

Onion Thrips . . . very tiny, elongate . . . cause silver color and sudden wilt in early summer. Destroy all refuse each year. Spray: 1 lb. tartar emetic (or $\frac{1}{2}$ pint Nic.sul.) + 1 lb. sugar + 1 lb. soap in 20 gals. water. Use good pressure. Repeat in 10 days.

Insects That Suck Out Plant Juices

Aphids or Plant Lice (4) small, soft, green, red or black, in colonies or masses on stems or leaves of any plant any season. Spray: $1\frac{1}{2}$ ozs. Nic.sul. + 1 lb. soap in 20 gals. water. Repeat in 4 days.

Tarnished Plant Bug (5) flattish, active, rusty. "Blights" buds and flowers of all plants. Dust: 3% D.D.T. Spray 1% D.D.T. Poisons remains on plants.

Insects That Attack Plants At Or Below The Ground

Cutworms (6) cut plants at ground level, spring and early summer. Mix 5 ozs. P.G. and 1 peck of bran, add 1 pint of molasses and water to make a moist mash. Scatter on soil in early evening.

White Grub (7) eats roots of strawberries, potatoes, roots of grass, corn, in spring and summer. Worst in newly ploughed sod. In late spring cross disc five ways with heavily weighted disc. Avoid susceptible crops in infested land.

Cabbage Maggot (8) . . . white, legless, headless, from eggs of small grey flies. Cabbage plants, etc., wilt and die in late spring. On stem and ground around each plant pour $\frac{1}{2}$ cupful of: 1 oz. Cor.sub. in 10 gals. water. Treat when wild cherries bloom and twice more at 7-day intervals. Use wood or glass for *very poisonous solution*.

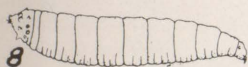
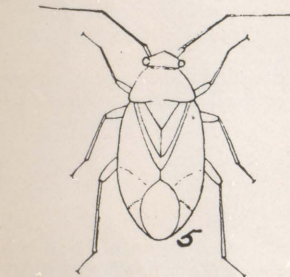
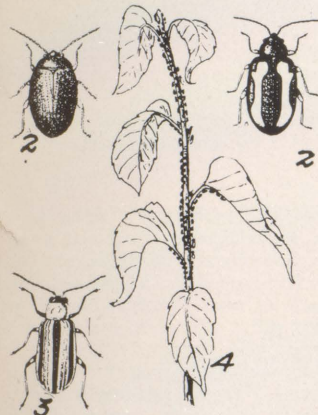
Onion Maggot (9) as above. Pour Cor.sub. along rows or spray with $2\frac{1}{2}\%$ oil emulsion in Bx.M.

Seed Corn Maggot — as above . . . attacks sprouting corn and *beans*.

Carrot Rust Fly (10) as above in carrots, parsnips and celery, in late May or early June and again in late summer. Plant summer crop in late June and use early. Plant storage crop in open, windy places, away from hedges. Treat twice at 5-day intervals in mid-May and again in late July with naphthalene flakes scattered next plants on both sides of rows. Treatment flavors roots for 6 weeks.

Insects That Bore Into Plant Stems

European Corn Borer . . . caterpillars up to 1 inch long, pinkish or brownish with two rows of indistinct black dots. Tunnel in stalks or cobs. Leave "sawdust" in leaf axils, holes in stalks. Destroy *all* corn refuse before June 1st. Spray 3 or 4 times at 6-day intervals beginning July 10 to 15, with 1 lb. Rot. 5 or 1 lb. Ryanex or 1 lb. 50 W.D.D.T. in 25 gals. water. 3% D.D.T. dust.





THE WARTIME PRICES AND TRADE BOARD

FARMERS' BULLETIN

SALES OF MAPLE SYRUP

The maximum prices at which a primary producer may sell any maple syrup to a processor an industrial user is: 15 cents per pound for ungraded syrup; 17 cents for Canada Dark grade; 18 cents for Canada Medium grade; 19 cents for Canada Light grade; and 20 cents for Canada Fancy grade. For either graded or ungraded maple sugar loose-packed in bags or other containers at random (known as "farmer's run"), the price is 25 cents per pound. This represents an increase of two cents a pound in sales to a processor or industrial user, and three cents a pound on "farmer's run" prices. There will be no change in the retail price of either maple syrup or maple sugar to the consumer.

FARM MACHINERY

Effective April 13, maximum retail price ceilings for Canadian made farm machinery and parts were increased by twelve and one-half percent. Board officials state that the increase granted, although less than half that requested by the industry, should mean that the supply of vitally needed farm implements will be produced to the maximum that labour and materials will permit.

TRANSIENT LABOUR

If you are in need of extra labour this year you will be faced with the problem of feeding them. Here is how to go about it. If you employ extra help for less than two weeks and intend to serve more than twelve meals, your local Ration Board, on application, will provide enough extra coupons to allow you to feed them without having to use your own coupons.

SEED POTATO PRICES

While ceiling prices are still the same for all varieties and grades of seed potatoes (Certified Seed, Foundation A and Foundation) as were in effect last year, the retailer's mark-up is slightly less, and varies throughout Canada according to transportation costs in each of the five zones.

PORK CARCASSES AND SIDES PRICES INCREASE

Effective April 1, domestic wholesale price ceilings on pork carcasses and sides show an increase of $2\frac{1}{4}$ cents per pound. The contract price for Wiltshire sides for the United Kingdom was raised from \$22.50 to \$25.00 per hundredweight, and the domestic increase will maintain the relationship between the domestic and export prices of pork.

BUTTER PRICES UP

As an incentive to greater production, on April 1 last, prices for creamery butter were brought more in line with those for other

dairy products by an increase at all levels of four cents a pound in price. Prices for dairy butter and whey butter have been increased by the same amount.

LIFT REGULATIONS

Recent removals from ceiling controls, while not affecting many foods produced in Canada, do include hops; preserved horseradish; edible tree nuts (when not mixed with peanuts); barrelled fruits and berries when in brine or sulphured and including citrus skins and citron; Maraschino type cherries; candied or drained peels and citron; candied glace or drained fruits; spices and herbs (except pepper, mace and nutmeg); fruit juices (except citrus, pineapple, apple and grape juice); vegetable sauces (except tomato sauce and ketchup and chili sauce); pickles, including capers; popping corn; dietetic foods labelled and sold as such; potato chips; sunflower seeds packed for sale as food; preserved peppers; canned beets, carrots and mushrooms, and various fish products. Among other items are bleaches for household use; cleansing fluids, polishes for metal, silver, brass, glass and windows; used beer, wine and spirits bottles and used food jars and bottles.

SUGAR FOR CANNING

The first half of the ten-pound allotment of sugar for home canning will be available to consumers with the validating of sugar-preserves coupons S8 to S12 on May 2. Provision for the purchase of the second half of the allotment will be made on July 4, when five more sugar-preserves coupons, S17 to S21, will be available. These 10 coupons will be in addition to the regular "S" coupons valid monthly during May, June and July. There is no difference between the above-mentioned coupons and any other valid "S" coupon, and all of them are good for your purchases of sugar or a corresponding amount of preserves.

YELLOW PRESERVES COUPONS — NOT VALID

Maple syrup producers are warned against accepting yellow preserves coupons for maple syrup purchases. These were cancelled in 1945 and are no longer valid for making purchases of any preserves. The only coupons acceptable for purchasing preserves or maple products are valid "S" green coupons, or, pink unnumbered sugar coupons with the "Beaver" imprinted, and which are issued to the Armed Forces or on Temporary Ration Cards.

MAY RATION CALENDAR

	Butter	Meat	Sugar-Preserves
May 2	R-7	35	S8, S9, S10, S11, S12
May 9	—	36	—
May 16	R-8	37	S13, S14
May 23	R-9	38	—
May 30	—	39	—

For further particulars of any of the above orders apply to the nearest office of the Wartime Prices and Trade Board